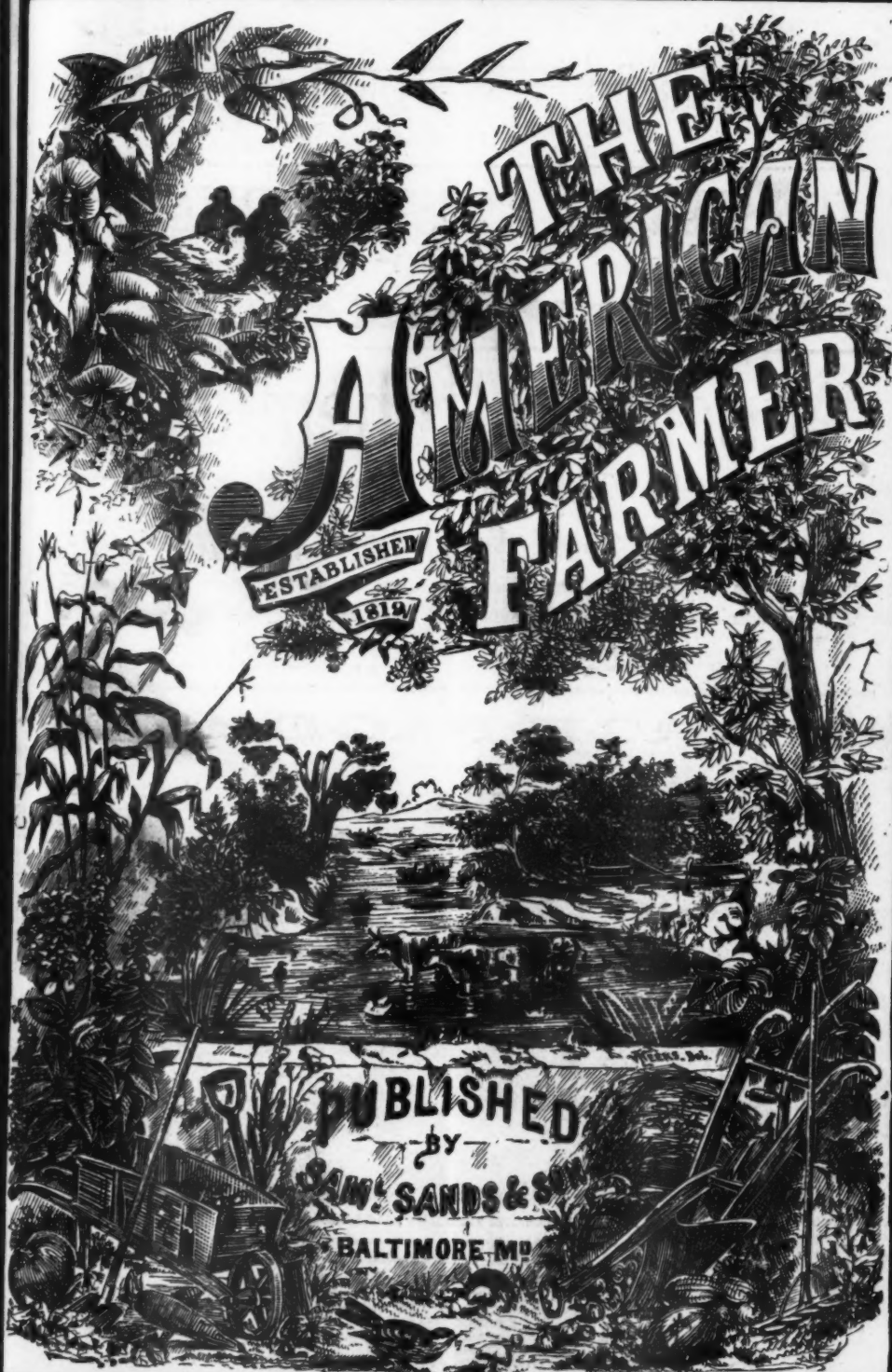


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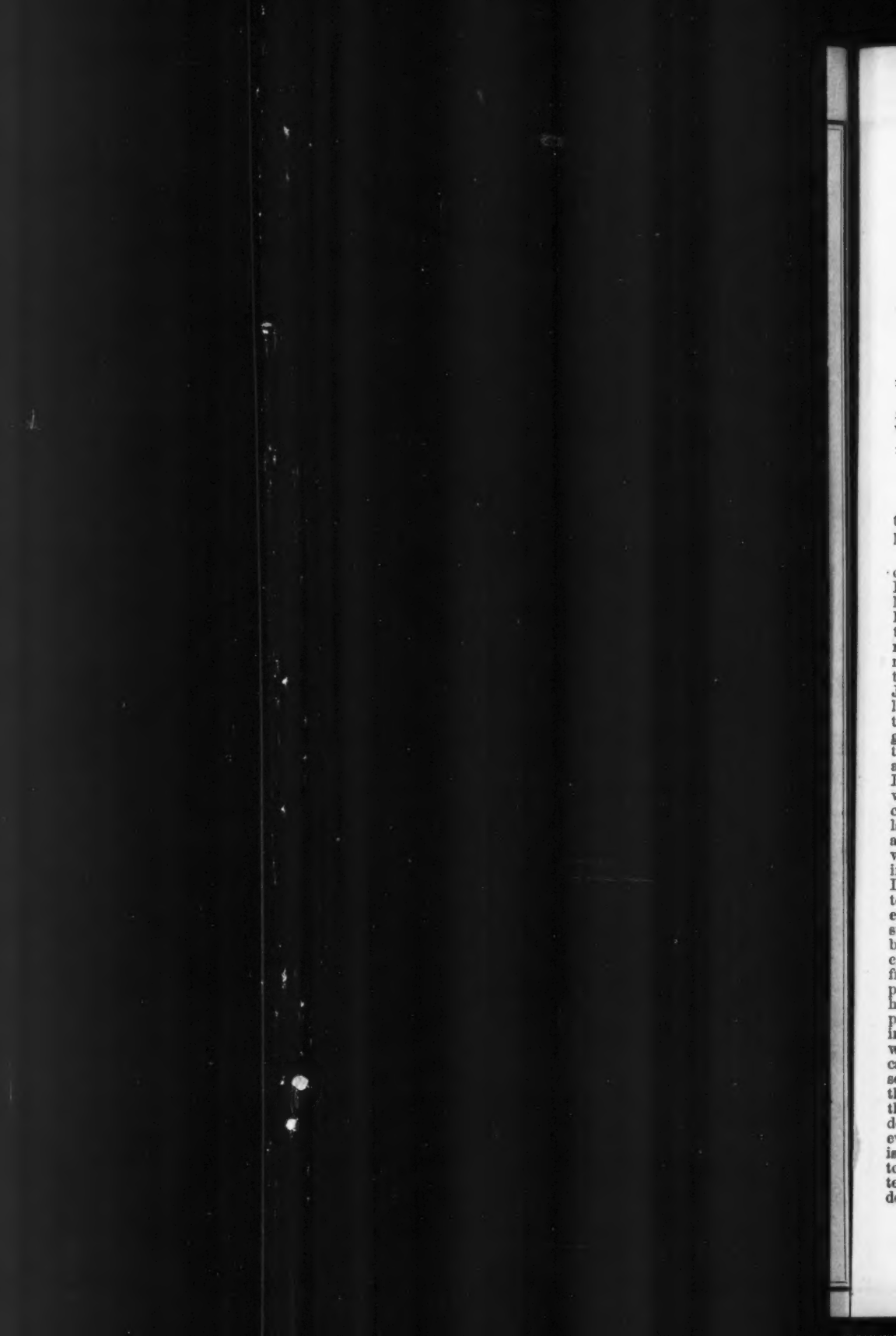


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[NEW SERIES.

## Profits of Drainage.

From a paper read before a Western association, by Mr. J. M. Harrison, we extract the following:

John Johnson, of Geneva, New York, began draining with tile in 1835 and ended in 1854. He put over 50 miles of tile in about 320 acres of land. He says that he never made money till he drained—that it will pay to borrow money at ten per cent. to drain, and that he usually realized all the expenses from the first crop. I met Mr. Latonrette at the Tile-Makers' Convention at Columbus. He was raised close to Johnson's farm, and told me that he visited it last summer, and drains made with horse-shoe tile that had been down forty years are still in good condition. Drainage deepens the soil. If the soil is full of water the roots of plants will all be found within a few inches of the surface. But if we drain, the action of the air and frost will deepen the soil, and the roots of wheat and corn will penetrate to a depth of 5 or 6 feet in land drained to that depth. An inch of soil on an acre weighs 100 tons. An undrained field, where the roots cannot go down more than 4 inches, will have 400 tons of available soil. Drain it 3 feet deep and you have over 3,000 tons of soil on an acre. Think of the difference! Drainage prevents the damage from standing, which kills out the best grasses and brings in the worst; and often drowns out an entire crop of grain. We get very little pasture from wet land, and the hay it produces is light, puffy, and the poorest kind of feed. When you have to starve stock to make them eat either pasture or feed you are doing them a positive injury. Drainage makes soil damper in dry weather because it makes it mellow and more capable of retaining moisture. It warms the soil because it gets the cold water out of it in the spring, and the warm rains soak down through it, carrying the heat from the surface downward. If the water was to lay there and evaporate it cools the soil, because evaporation is a cooling process. Wheat is indispensable to the growth of vegetation, and requires a temperature not below 45 degrees nor above 95 degrees Fah. Corn must have 10 degrees more

than wheat. Careful experiments prove that crops grown increase as the square of increase of the temperature of the soil. For instance, a good soil at 60 degrees might produce 25 or 30 bushels of corn per acre. Increase the temperature to 80 degrees and we would get 100 bushels per acre. It requires all the lengths of seasons we can get to produce some of our crops. We can always plow and plant earlier in the spring on drained land. Grass will often start two weeks earlier and grow later in the fall. Last fall the early frost did not damage corn near as much on drained land as the undrained in the same field. Spring water absorbs carbonic acid, and carbon is the great element in plant life. Hence, water oozing out of the ground robs the plant of nearly all its food. Drainage improves the texture of the soil because it renders it mellow and friable. We can work drained land sooner after rains.

A corn crop is often lost by the ground being too wet to work it at the proper time. Wheat crops have also been lost by the ground being so wet in harvest that a reaper could not be used. After drainage there was no trouble in this respect.

It will prevent hilly land from washing because the water will pass off through the drains and the droppings of stock will remain and make a good sod. It will prevent sporty land from slipping because the surplus water is carried away and the soil remains firm. Manure applied to wet land is nearly all lost by being carried off with the surface water. On drained land it filters into the soil, and remains there until used up as plant food. Drainage will prevent our best grasses from running out. It will prevent clover or wheat from freezing out. It makes food for plants out of the mineral ingredients of the soil because it exposes them to the action of the air.

Rain water falls to the ground heavily loaded with carbonic acid. This is the great element in plant life. When the water filters through the soil it gives this up to the plants, and runs out of the drains as pure as spring water. Drainage prevents diseases peculiar to low marshy lands, such as fever and ague. It should be urged as a means of ventilation. In towns and around farm buildings where the filth of many years

accumulates, the soil becomes very impure and gives off poisonous vapors. The people in our towns and villages are not aware of the filth they consume and the diseases they invite. A well will drain one hundred feet in every direction. I know wells that receive filth from stables, privies, pig-pens and streets. This could all be prevented by deep drains carrying the water away from these places. Nearly every barnyard in the country has been a mud-hole this winter for want of proper drainage. Drainage will prevent soil from sinking. A well-drained field will immediately absorb all the water of ordinary rain. There is room between its particles of soil for more water than was ever known to fall in the United States in any one month since the deluge. Experiments made with the Lysimeter show that over 26 per cent. of the annual rainfall will percolate through 25 inches of soil having grass on its surface.

These experiments are very unsatisfactory, because the annual rainfall in England is less than in the United States, yet the per cent. of percolation is greater. The soil receives a great deal of moisture by capillary attraction. When a field is well drained the surplus water passes off immediately in a spell of wet weather. The soil being porous draws moisture by capillary attraction from the atmosphere and from the lower parts of the earth, and a crop is not liable to be injured by either a severe drouth or heavy rain. Drainage increases crops from 25 to 100 per cent. It pays from 50 to 100 per cent. on the capital invested. There are a great many farmers in our country living on undrained land, and loaning money at 6 or 7 per cent., who could make 50 or 60 per cent. out of the money if they would use it in draining their land. Draining with tile is a permanent improvement. It is a safer investment than bonds. It enhances the value of the land. It will never be destroyed by fire, and the decay is imperceptible. Nothing short of an earthquake will remove it; hence it is as safe as the land itself.

#### ROAD DRAINAGE.

Road drainage is an important subject. Many of the roads in our country are almost impassable at the present time. When there is a large ditch on each side of the road without sufficient means for the water to escape, the road-bed becomes so thoroughly soaked in winter and in the spring that it seems to have no bottom whatever. In making roads on bottom land we ought first to secure a sound road-bed. This can be done by putting a tile drain three or four feet deep in the centre of the road. The size of the tile needed will depend on the distance to run before a good outlet can be secured. The water from the side ditches of the road will soak into the tile drain, and we will always have a sound bottom. This has been practiced in Europe for many years. They have already begun the work in the Western States. Piking roads, except in towns and cities, is fast becoming a thing of the past. A road can be drained with trifling cost when compared with the cost of a pike. There are miles of bottomless roads in our country which would be sound and solid if they had been thoroughly drained a year ago.

#### DEPTH OF DRAINS.

The depth of drains must be governed by the outlet. If a good outlet can be secured, the drains are better to be four feet deep. Two drains will do as much good if put four feet deep as three drains two and a half feet deep. The two deep drains can be dug about as easily as the three shallow ones, and you save the tile and have a better job. To drain land thoroughly it usually takes from thirty to forty rods of tile per acre. To hire the ditches dug and buy the tile cost from five to twenty dollars per acre, owing to the size of the tile needed, the depth of the drains, the kind of land and other contingencies. The cheapest way to get draining done is to have the tile on hand and to do it at odd times through the summer when other work is not pressing. With regard to the size of the tile needed, the following is a safe rule: square the size of the tile and it will give you the number of acres for which it will form a main drain. For instance a two-inch tile will form a main drain for four acres, a three-inch for nine, a four for sixteen, etc. Allowance must be made for strings. S. J. Wooley, in his prize essay on drainage, says that a single eight-inch tile will carry as much water as an open ditch four feet wide and two feet deep. The ditch should be carefully graded so as to secure some fall throughout the entire length of the ditch. If there are any low places the sediment will settle there and fill up the drain. A grade of two inches in every one hundred feet is sufficient to make a good drain. More of a fall is better, but thousands of tile have been successfully laid with less than two inches in one hundred feet. If the drain is short, dig it first and commence to lay tile at the upper end. If it is a long drain commence at the lower end and dig the ditch, grade it, lay the tile and fill or partly fill the ditch as you work upward, being very careful not to let any dirt enter the tile, and when not laying tile close the upper end with a board or flat stone. When the water will run through a ditch without showing any dead places you will be perfectly safe in laying your tile. Water will run four times as fast through a tile drain as it will in an open ditch of the same grade.

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#### Old and New Views on Humus.

Prof. Caldwell, of Cornell University, gives some facts from recent investigations, which add to the information regarding the uses and functions of humus in the soil:

The substance, consisting largely of carbon, which we call humus, is a heterogeneous mixture of products of all stages of decomposition of vegetable and animal substances in the soil, between the original remains of the once living organisms and the final products of their decay—carbonic acid, water and ammonia or nitric acid. Its proportion in our arable soils varies between the widest limits—from 1 per cent. up to 40 or 50; the ordinary quantity ranges from 2 to 5 per cent. This humus was once thought to be the only, or at least the chief, source from which the plant derived the food for building up its organic part. But it has been clearly

demonstrated by both observation and experiment that vegetation does not depend on the soil for carbon, its most prominent constituent, and that it can get this substance entirely from the carbonic acid of the atmosphere.

Humus is, nevertheless, a useful ingredient of soils; we should be directly at variance with one of the farmer's most positive opinions if we should affirm that it is worthless; a garden soil, dark-colored with the accumulation of humus derived from its rich manuring is, in his view, the best representative of a fertile soil; and we can find valid reasons enough for the belief without supposing that humus serves directly as plant-food. It greatly improves the texture of some soils; in a light, sandy soil it serves as a sort of binding material to hold together the loose particles, and thus as it were to granulate the soil; even only 1 per cent. of humus added to sand produces a decided effect of this kind; hence the popular belief that humus gives body to a light soil.

On the other hand, humus mixed with clay diminishes its adhesiveness, makes it lighter and more porous, and in every way improves its working qualities. Humus by its dark color favors the absorption of heat and the early warming of the soil in spring; consisting as it does of vegetable substance in process of decay, in a properly-drained and tilled soil it is unceasingly liberating, in a very finely-divided state and in an excellent condition for reabsorption by the new vegetation, the ash-ingredients, potash, lime, phosphoric acid, etc., which make up an essential though a small part of every plant. Further than this, it acts on the native stores of these ash-ingredients in the soil, dissolving them and bringing them within reach of the plant; insoluble compounds of both potash and phosphoric acid in the soil may, as has been proved by experiment, be thus brought into solution.

Furthermore, numerous experiments have shown that humus in more ways than one may serve to increase the quantity of nitrogen that becomes accessible to the plant in the course of its growth; it contains more or less combined nitrogen itself, derived partly from the plant of which it constitutes the remains and partly from the stock of ammonia in the atmosphere. Recent experiments by Storer indicate that this nitrogen, even though it may not have passed on into nitric acid, in which form the plant appears especially to prefer its nitrogen, is yet assimilable, and may be of much value to the plant.

The results of some recent researches by Grandeau appear to furnish another reason for the value of humus in the soil, as an indirect provider of plant-food; to that part of the humus which may be extracted from it by a solution of potash or of carbonate of ammonia he gives the name of "black substance" (*matière noire*), and to the presence of an abundance of this in the so-called Russian black earth, which probably corresponds very nearly with our prairie soils at the West, he attributes its remarkable fertility. This soil is not unusually rich in plant-food, nor does he think its fertility is due, so much as is generally supposed, to its fineness and uniformly good physical condition.

A solution of this black substance, obtained by pouring over a humus soil a solution of carbonate of ammonia, was found to contain all the essential ash-ingredients of the plant; and this solution appeared to possess the peculiar property, when brought in contact with the feeding rootlets of a plant, of giving up to them those ash-ingredients without itself entering the plant; hence the substance seemed to act as a carrier of the food from the soil to the plant.

Grandeau determined this black substance in several soils, and found an unmistakable relation between it and the fertility of the soil rather than between the total humus and fertility, and a still more pronounced relation between the fertility and the proportion of ash ingredients contained in the extracts of black substance. He tried experiments with soils artificially enriched in black substance, by mixing with them another soil rich in this substance, but poor in potash and phosphoric acid; the soil thus enriched yielded in pot culture almost twice as large crops as did the original soil in a rotation of barley, fallow, tobacco, maize and beets; he also succeeded in getting plants to grow vigorously in coarse sand, watered only with a solution of black substance. These researches add new support to the opinion, already well-grounded, that humus is an ingredient of our arable soils that should be highly prized, and that all reasonable means should be taken to maintain a fair proportion of it by the liberal manufacture and use of stable manure, or by frequent plowing in of green crops.

### The Nitrogen of Plants.

Prof. Puryear, in the *Religious Herald*, gives the following views concerning this indispensable and costly ingredient of our crops:

Nitrogen may be easily obtained from the atmosphere, of which it constitutes four-fifths by volume. We have before us, say a pneumatic trough, the water rising an inch above the shelf. We float a flat cork on the water just over the shelf, and put on the cork a small piece of phosphorus, which we ignite. Let down a bell-glass over the burning phosphorus, resting it on the shelf. The phosphorus burns at the expense of the oxygen of the air thus confined. The white fumes of phosphoric acid appear, but are gradually absorbed by the water, which rises until it fills one-fifth the capacity of the bell-glass, thus indicating the amount of oxygen removed. When this is over, the vessel is perfectly clear again. The bell-glass is four-fifths full now, not of air, but of nitrogen gas. Let us transfer the gas to a smaller vessel, just large enough to contain it, and proceed by experiments to learn its properties. If we put a burning taper into the gas, it is extinguished, nor is the gas set on fire. Nitrogen, therefore, is non-combustible and a non-supporter of combustion. A rat, put into a vessel of nitrogen gas, dies almost as promptly as a taper is extinguished, and for the same reason. The absence of oxygen is as fatal to the taper of life as to the taper of wax. We cannot smell or taste nitrogen; it has but feeble affinities for the other

elements, and when it does combine with them, the resulting compounds are easily disrupted. In the atmosphere, nitrogen is not combined with oxygen but only mechanically mixed with it, holding it in restraint, checking its fiery energy. Its office in the atmosphere is rather subordinate and negative; but when we come to consider its relation to agriculture, it comes proudly to the front. It constitutes from one per cent. to three per cent. of the weight of plants in their natural state as to moisture—a small per centage, the reader will say, but a vast mistake will be made if on this account it be considered unimportant. In order to understand clearly the importance of nitrogen in the vegetable economy, let us consider the composition of wheat, the highest type of vegetable food:

Water.....	15
Starch.....	42
Gum and Sugar.....	9
Nitrogenous substances.....	15
Oil.....	2
Woody fibre.....	15
Ash.....	2-100

About fifteen per cent. of the grains of wheat is nitrogenous matter, mostly gluten, and nitrogen is about fifteen per cent. of gluten, so that 100 pounds of wheat grains will contain only about 2½ pounds nitrogen. The amount of nitrogen, therefore, is relatively small, but the nitrogenous compounds, the albuminoids, as they are frequently called, are all-important, are indeed the compounds which give to the cereals their special importance. Look at the table. Of the water, fifteen per cent., nothing need be said. The starch, sugar, gum, woody fibre, all together sixty-six per cent., are burnt off in respiration, never becoming a part of the animal tissues, being designed simply to maintain animal heat. The oil, two per cent., is designed to lubricate the joints, to plump out the form, and also in emergency to be burned off and to develop heat, which it does, being richer in hydrogen to a greater extent even than the compounds just mentioned. The ash, two per cent., is half phosphate lime, and hence its principal use is to build up or repair the bony skeleton. Thus we dispose of eighty-five per cent. of the weight of wheat. The remaining fifteen per cent., the nitrogenous compounds or albuminoids, are identical in composition with the nerve and muscle tissues of animals, and to be converted into nerves and muscles need only to be reduced, digested and assimilated. They only become a part of the animal, furnishing the material of strength, physical and intellectual. Peas and beans are richer in nitrogenous matter (containing twenty-four per cent.) than wheat, and hence their great value in army rations and in supporting life when unusual labor is to be performed.

What is the source of the nitrogen of plants? It would seem, at the first blush, that the question admits of easy answer, plants being surrounded by an atmosphere four-fifths of which is nitrogen. But the leaves, which avidly suck in the mere trace of carbonic acid in the atmosphere, refuse to take up nitrogen. Water absorbs nitrogen, and the roots suck up water from the soil. Perhaps enough nitrogen gets into the

circulation in this way by the roots? We answer, No. Water absorbs about 1½ per cent. of nitrogen, and it may easily be demonstrated that the maximum amount of nitrogen that could be introduced in this way is altogether too inadequate to meet the demand of vegetation. An acre in hay yielding 2½ tons will demand 60 pounds nitrogen; but it can be shown that the maximum amount of nitrogen that could be absorbed by the rain falling during the growing season is only 10 or 15 pounds. This may possibly be a source; but if it is, it is altogether an inadequate source.

Indisputably, the great source of the nitrogen of plants is ammonia (a compound of nitrogen and hydrogen,) and nitric acid (a compound of nitrogen and oxygen,) and both chiefly in the form of salts. It has been found that the gluten of wheat is greatly increased by manures rich in ammoniacal compounds, or by applications of the nitrates.

Whenever organic bodies containing nitrogen decompose, the nitrogen escapes in the form of ammonia. Ammonia, therefore, is constantly escaping into the atmosphere from the excrements of animals, from the flesh and blood of dead animals, and as the result also of vegetable decomposition. Snow and rain in falling wash out this ammonia from the atmosphere, and present it in its purest state and most available form to the roots of plants. We note a few properties of ammonia, its salts, and the nitrates as fitting them for their important functions.

(1) They all decompose readily, so that vegetable energy is easily competent to rend the compounds asunder, using their elements as necessity may demand.

(2) Water absorbs 700 times its volume of ammonia, so that when water enters into the vegetable circulation it must carry with it the ammonia absorbed from the atmosphere, and also the ammonia directly resulting from vegetable decomposition in the soil.

(3) All the nitrates and all the salts of ammonia are freely soluble, and so get access easily into the circulation.

We have not concluded what we intend to say, but our space is exhausted. We will resume this topic in another issue.

### Soluble and Insoluble Phosphates.

Dr. Augustus Voelcker says, in a recent article in the *Journal of the Royal Agricultural Society*:

"Briefly stated, the following are my views on the comparative efficacy of different kinds of phosphatic materials, and the economy of applying them to the land, either in a raw state or after treatment with acid:

"1. Acid or soluble phosphate is not usefully taken up as such by plants, and has to become insoluble in the soil before it can become plant food.

"2. The efficacy of insoluble phosphate of lime as a fertilizing ingredient rises or falls with the more or less finely divided state in which it occurs in various phosphatic materials.

"3. The finer the state of division of the particles of phosphate of lime in phosphatic materials, the more readily it is soluble in water, and



the more efficacious are the phosphatic materials as manure. Therefore, coarsely-ground coprolites and other phosphatic minerals are less soluble and less efficacious than in a state of fine powder.

"4. In porous soft bones the phosphate of lime occurs in a different state of aggregation than in hard bones, and in the former condition phosphate is more soluble and efficacious than in the latter; and for the same reason the phosphate of lime in fine bone-dust is more soluble in water and more efficacious than the phosphate of lime in half-inch bones or coarse bone-dust.

"5. In the form of hard crystalline phosphate of lime, mineral phosphates—such as Norwegian, Canadian and Spanish apatite—are less soluble than in the shape of porous phosphatic materials, such as certain kinds of phosphatic guano and semi-fossilized rock guano, for the simple reason that the particles of phosphate of lime are more finely divided, and in every case more soluble in water in the more porous materials than in crystalline hard materials.

"6. By treatment with acid, the phosphate of lime in phosphatic materials is rendered perfectly soluble in water, and on the application of dissolved phosphatic materials (super-phosphate) to the soil, the soluble phosphate contained in the super-phosphate is precipitated and rendered insoluble by contact with the soil.

"7. In this precipitated condition, insoluble phosphate of lime is infinitely more finely divided, and in consequence greatly more efficacious, than in the finest state in which the raw materials used by makers of super-phosphate can be obtained by mechanical means.

"8. In my judgment, chemical treatment with acid is the most economical and best plan of utilizing mineral phosphates for agricultural purposes."

#### The Uses of Lime in Farming.

From an Irish agricultural paper we take the following summary of the uses of lime:

The uses of lime are in part mechanical and part chemical.

1. Upon deep alluvial and clay soil it increases the crop of potatoes, and renders them less waxy. Sprinkled over potatoes in a store heap, when both the potatoes and the lime are in a dry state, it preserves them, and when riddled over the cut sets at planting-time it wonderfully increases their vitality.

2. Lime eradicates the finger and toe disease in turnips, and helps to give greater firmness to the bulbs.

3. It gives when applied to meadow land a larger product by producing more nutritious grasses, also helping to exterminate the seeds of mosses and aquatic plants.

4. Upon arable land it destroys weeds of various kinds.

5. It rapidly decomposes vegetable matter, producing a large amount of food for plants in the form of carbonized elements.

6. It destroys and neutralizes the acids in the soil, hence its adaptability to some lands.

7. It acts powerfully upon some of the organic parts of the soil, especially upon sulphate of magnesia and alumina.

8. It proves fatal to worms and slugs, and the larvæ of insects, though favorable to the growth of shell-bearers.

9. Slacked lime added to vegetable matter causes it to give off its nitrogen in the form of ammonia. Upon soils in which ammonia is combined with acids, it sets free the ammonia, which is seized upon by the growing plants.

10. Its solubility in water causes it to sink into and ameliorate the subsoil. When the soil contains fragments of granite or trap rock, lime hastens their decomposition and liberates their constituents.

11. Its combination with the acids in the soil produces saline compounds such as potash and soda, which immediately enter into plant growth.

12. Strewed over plants it destroys or renders uncomfortable the location of numerous species of insects which prey on the surface—notably the turnip fly.

13. Worked in with grass seeds the beneficial effect of lime, chalk, marl and shell sand—into the composition of all of which lime largely enters—it has been known to produce visible effects for upwards of thirty years.

Applied to manure, lime serves to destroy the seeds of various weeds, the larvæ of insects, and otherwise exercises a very beautiful effect in the liberation of organic constituents, and then assists in their combination with other and more useful forms of plant food.

...

#### Laying Down Grass Lands.

The following is from an experienced correspondent of the *Country Gentleman*:

To insure the greatest success with grass the nature of the soil and climate must be considered and the proper grasses adopted. It will not do to put timothy or red-top on light sandy or leachy soil, because our climate is too dry generally for such soils,—these plants requiring moisture. Hence it is that a clay loam is better adapted to them, and can be made to grow them for a long time, if not permanently. A field on the old homestead was thus kept in timothy for thirteen consecutive years, varying little from two tons per acre. There was no other grass in the field. The soil was a clay loam, of a yellowish gray color, with a moist subsoil. The water line being near the surface, kept the upper soil comparatively moist—in some places too moist, causing mischief by frost in the spring. It is such a soil as would be improved by underdraining for the grains and the deeper-rooting grasses, as has been sufficiently demonstrated.

I find timothy and red-top go well together in such and similar soils, growing heavier crops than either alone. In the field above-mentioned, the means of enrichment was principally the aftermath, plaster and some manure being applied at first. No hoof was allowed on the land, giving a chance for the aftermath to form a good growth. This served for protection and plant food, keeping up the yield so that the last crop was as good as any. The land was then plowed, and a heavier crop of grain raised than ever

before. Other fields of similar soil are being treated with similar success. Evidently timothy (or timothy and red-top) is the proper grass for this land; and there is a large proportion of such soil. The grass needs only a good start, the land to be worked up mellow and sufficiently enriched, and the fertility maintained.

Where the soil is deeper and has good drainage, such as limestone or river soil, including sandy loam and all rich deposits having depth, the larger and stronger-growing grasses should be grown. Nothing perhaps is better than orchard and Kentucky blue grass—rank growers and rich in nutriment, allowing of two cuttings, the first when in full stalk, the other in "bottom" growth or aftermath, making a richer feed than the first mowing. For pasture these grasses are equally good, if not better, forming a dense luxuriant herbage, retaining its verdure in a drouth if not unusually severe, and affording feed early and late in the season, the fall frosts affecting it but little. Of course it requires fertility to do all this, and the amount must be proportional to the growth, which means a rich soil, and if deeply rich all the better. To realize not only great returns, but profit, (the profit increasing as the yield enlarges) liberal top-dressing is demanded. In such soil the roots of these strong-growing grasses penetrate deeply, going beyond the reach of an ordinary drouth, and further aided by the thick cool mat at the surface which protects the soil from the sun and drying winds, retaining also moisture longer after a rain.

In both of these cases—timothy or red-top on a moist clay loam, and orchard grass and poa-pratensis on good well-drained land—more or less permanence may be expected, depending largely upon the season. Thus in the past few seasons the prevalence of showers has thickened the sod in this section. In seasons of drouth the reverse is the case. It is only such soils with their grasses as have been indicated, that will stand the strain; and in a severe drouth, or two or more dry summers in succession, they will so thin out that it becomes a question whether it were not better to break them up and re-sow. But generally a moist season or two will bring them right again with perhaps some change in the vegetation, weeds and other grasses springing up in the vacant places. If the soil is a clean one, the grasses intended will maintain themselves. We thus may have permanent grass lands, though they may not always be profitable. This condition can be secured only by adapting the grasses to the soil, and having the soil rich and in good condition.

To change the grasses of one soil for another alters the case. The timothy has too short a root for the dry soil; so with red-top and some other grasses in use; while the deep-rooting grasses would find an obstruction in the cold, wet and hard subsoils. Yet these grasses and others are sown indiscriminately on all kinds of soil. Particularly is this the case with timothy, one of the grasses that will allow it the least.—We therefore have the indifferent success which we see—timothy unable to stand the drouth, even in rich soil, if of a sandy or gravelly character, especially if the crop is cut late, as is

usual, and in a drouth, as also is common. I have known whole fields of heavy growth entirely ruined. Early cutting, so as to give a chance to start the second growth, would have lessened the evil. But the safe and the only true way is to adapt the grasses to the soil. Those named are popular, and their value is well known. There is no risk in such case; only do the work well; and this requires not only attention to the land, but care is to be exercised in putting in the seed.

In all cases it should be so managed that the seed may be put in early in the spring, or early in the fall,—spring being best on account of the winter moisture, which seldom or never fails to start the crop. In the fall, dry weather will sometimes interfere, though in this section fall seeding has been practiced of late years, and with uniform success, the time of sowing being from the first to the middle of September. What we have most to fear is dry weather. To sow late in the spring, therefore, is to run directly into the danger of drouth, which is apt to occur at this time, and in aggravated form, extending sometimes well into summer. Nothing can prevent failure in this case. The short root of the young plant (if started at all) is confined to the surface, where the soil is driest, even in rich, mellow ground, if the drouth is severe, showing the importance of deep rooting plants to withstand our dry summers. But even if the season favors, the plant in late sowing will not be so strong as if put out earlier.

The difference is still greater with fall sowing, as it so far advances the crop, an important thing in seeding down land, as time is required for a full root development and spread of the grass, taking several years before a thick set is secured, yet paying in the start if the circumstances are all favorable. Sowing on the late snows in spring has always done well with me, the frost covering the seed. Sown later, I prefer a smoothing harrow to cover; though a brush-drag, if constructed so as to evenly stir the ground and not displace it, does well. We need an implement made expressly to cover seed. A very light harrow, with fine teeth, wide spread, and jointed so as to adapt itself to the inequalities of the ground, would do well in the absence of better. As it is, the frost, in the freezings and thawings of spring, does it best, covering the seed lightly and at a more uniform depth.—Sown late, with the chances of a drouth following, the harrow should always be used. In a dry time, if the soil is mellow, the seed will bear to be put in deeper; if wet, the more lightly covered will come. Hence more seed should be sown when put out late. It is best, in all cases, not to be sparing of the seed.

As to the different grasses to be sown I have already spoken, in connection with the soils adapted to them. I find it better in general to sow one or a few of the large thrifty kinds, than many. If it is found that other grasses do better associated with them, these usually appear, as they are native and grow in soil and climate suited to them. It cannot be denied that more can be produced where the ground is occupied by the large productive grasses, which are also among the most nutritious, than if part



of the ground is possessed by the smaller kinds. We have an example of this in the luxuriant fields of Kentucky blue grass in the West; also timothy on clay loams of suitable condition and richness, and orchard grass on our low, rich, mucky land, or any deep, strong soil. On our upland drift, a variety of the native grasses is apt to prevail, including white clover—a moist season developing them luxuriantly, if aided by a fertilizer, crowding out sometimes the stronger introduced varieties. The reverse is the case in a dry season, when red-top, white clover and other light-looking grasses disappear, except in moist (not wet) places, where they survive and become perennial. To break such sod is ill-advised, as it is less calculated for grain than for grass, unless ditched and thoroughly worked; and then, the soil having changed its condition, its grasses must be changed also, growing now the more productive kinds.

### Thin Seeding of Wheat.

*Messrs. Editors American Farmer:*

I have read with much interest and pleasure the interesting article in your last number, by Mr. Shipley, in which his experiments with wheat are given. It is particularly interesting to the writer, from the fact that it comprises his own conclusions, drawn out by experiments of a similar nature, and the result of which prompts this paper.

Several years ago a small spot in a poor field was selected; a good-sized pile of old wood, brush, weeds and the like was collected during the summer, and, after being thoroughly dried, fire was applied the last of August; and the season having been a very dry one, and the heat being very great, every vestige of organic matter seemed to be destroyed for some inches below the surface, the main object being to see if wheat would grow without the presence of organic matter or the artificial application of nitrogen in any form. On the 10th of September the grain was planted about six inches apart. Four weeks afterwards, on visiting the spot, I found it up nicely, with a beautiful green color, and the blades reaching one foot above ground; the result being so satisfactory that a sample of the same was sent at the time to Prof. Johnson, of Yale College, with a full statement of its history. The wheat continued to grow rapidly, with numerous branches, and was watched with much interest. In due season it ripened, and, being astonished at the number of grains found on the growth from a single seed (by actual count over 800) some of them were pulled up and presented at the first meeting of the Maryland Academy of Sciences I attended. In some cases I found thirty to forty stems, each having a head of wheat, and, if I remember correctly, some had as high as sixty grains in them. After being examined by Dr. Murdock and others, they concluded that it was simply impossible for all to come from one grain, and that a number of grains had gotten together by some means.

Knowing that Dr. M. was good authority on all botanical questions, I had nothing to say, although firm in the faith that one seed did the

business, and determined to repeat the experiment in due season,—using great care in planting, and careful that the seed should have no company. The brush, weeds, &c., were collected, and in September burnt as before; and as soon as the heat was out of the ground the seed planted. It is unnecessary to report the progress, as it is a repetition of the first experiment. In due time my harvest approached, but, unfortunately, notwithstanding a high fence inclosed the spot, it was in reach of a young colt, which bit the heads all off, hence I was unable to estimate the grains of wheat to each one sown; but the stems were intact, and collecting them, they were carefully secured, to be presented at the next meeting of the Academy. It seems my friend Dr. M. was not satisfied with his conclusions regarding the first exhibition, and, like all sensible men, desired more information. Armed with my documents, the meeting was attended with a full determination to combat science with the positive facts of the case.

I had planted my number of grains, and had the right number of bunches. My fun was spoilt, however, for the Dr. got the floor first, and frankly, and like a man, acknowledged his error, and went a little further than I am prepared to go, by stating it was possible to grow a million of seed from one. If such is the fact, why do farmers sow from five to seven pecks to the acre, when as many pounds will do the business by proper attention to planting and cultivating?

As figures usually tell the truth, I propose giving them to show how much wheat can be raised to the acre, planted six inches apart, and assume that each grain will produce half as much as was found in the stalk of my first experiment. By actual count from a mixture of different samples of the best wheat, I could find a fair average will be from 12,000 to 14,000 to the pound, or 720,000 to the bushel. An acre, 210 feet square, will require 176,400 grains to plant six inches each way; and if each grain grows and produces 400 seed, will equal 98 bushels to the acre. With anything like such results, what becomes of the million and more grains usually planted, producing 8 to 20 bushels to the acre? In conclusion I would suggest that experiments be made, concentrate the manure on less land, sow less seed. Wheat, unlike many other plants, must have nitrogen to form gluten; and to get it from the air, the soil must be in a condition to admit of the free absorption of air and moisture, and abandon the idea that every offensive quarter must be hunted up to obtain matter that will supply a minute portion of the necessary nitrogen to grow a crop of wheat.

Kent Co., Md.

A. P. S.

It is of the very utmost importance that stock should have good pure water and plenty of it. The thirst of animals during the hot weather can readily be imagined from judging it by human thirst; and to deprive the animal of a sufficient drink is, about the worse species of cruelty that can be inflicted upon the brute creation. The agony of excessive thirst is simply terrible.

## Our French Letter,

## Fattening Sheep.

*Messrs. Editors American Farmer:*

M. Schnorrenpfel, of Proskau, has obtained some curious results in sheep fattening. He put up 247 Southdown Merinos, without any selection, on 11th November, 1878,—they having been dropped between April and June, 1877.—Out of this lot he selected five, and a similar number of ewes, two years old, specially set apart for a cattle show. The 242 were fed during 124 days on barley-glands, beet, hay and distillery refuse, in measured quantities. The 10, in addition to this regimen, had peas, rye bread and oil cake. The first lot put on flesh at the rate of 3½ ounces per day, the second at 5,—the total cost per head being for each lot fr. 15½ and fr. 47 1-10 respectively. But the 242 only yielded a net profit per head of fr. 1½, while the 10 produced fr. 19 each. The 10 could have been sold in the middle of May for the price they realized one month later. At the former date the animal's appetite had become jaded, difficult to excite, owing to their condition of fat; they generally remained lying down when consuming their provender; and finally refused cake, peas and bread, for beet, glands and hay.

M. Schnorrenpfel concludes that it is economical to permit animals to gorge themselves at will, provided the food they leave each day can be consumed advantageously by other animals.

## Agricultural Societies in France.

France has now three national agricultural societies. The first is supported by large landed proprietors, is aristocratic and protectionist; the second is liberal, in a sense official, and open to all classes; the third and latest is frankly republican, is neither a landlord's club nor an official machine, but eminently independent, and embraces the circle of petty farm proprietors. The population of France is 39,000,000. More than one-half of the population is engaged in farming pursuits. There are 2,500,000 proprietors of holdings of 24 acres and below; 636,000 owners of farms between 13 and 56 acres, and 154,167 proprietors of 57 acres and above. The new society claims to be the exponent of the first category, and since its formation in March has enrolled 3,000 members. The society will hold its annual meetings in the chief towns of France by rotation, and distribute prizes. It has already allocated funds for this purpose, the first prize being awarded to the teacher of a school at Tulle, who established a model farm and imparted agricultural instruction to pupils and farmers, unaided by the State or any society. It is interesting to remember, that the petty land-owners predominate in the most fertile districts of France, while the large proprietors' estates are in the poorest and wildest regions, the *landes*, in Berry, Sologne, Limousin, &c.

## Green Rye for Feeding.

Rye is largely employed for green feeding in Normandy and the suburbs of Paris. But of late winter barley seems to be more relished by stock; it is sweeter and somewhat more tender. Its nutritive value is very different following the period of its development. When young it con-

tains but 6 parts in 100 of dry matter, and 21 about fifteen days after coming into ear. In point of azote it is not richer than rye or hay, but it is more precocious and saccharine.

Respecting rye, a farmer has since years employed it as bands for sheaves in place of wire or cord. He sows the rye during the first fortnight of September, on a skim-ploughed wheaten stubble. The dryness of the soil at this period ought to cause no apprehension. In spring, when the rye has well flowered, and the straw, without being yellow, is sufficiently strong, it is cut, dried in sheaves, and stacked near a shed; then, on days unfit for field work, the servants are employed knotting five or six straws under the ears, for bands, which are extremely tough.

## "Cuzco" Corn.

Peruvian valleys furnish a maize (*Cuzco*) of a remarkable quality. It attains the height of 13 and 16 feet, and the stem is as thick as a man's arm. The juice is reputed to be rich in sugar. The difficulty of propagating this variety in Europe has been owing to the female flowers only coming into bloom after the male ones had become dried up, and so made fecundity impossible. The drawback has been met by so regulating the distances of sowings that some of the male flowers will be in a fit state to communicate fertile pollen when the female flower expands.

## Feeding Horses.

Much economy remains yet to be made in the feeding of horses. It is asserted that in this sense 40 per cent. of the rations of the French cavalry could be saved, and the national budget lightened by several millions. M. Bouley, the celebrated veterinarian, attributes the salutary effects of oats on horses to an aromatic odor contained in the husk. Good oats we know ought to be dry, heavy, shining, slipping readily through the fingers, and exempt from all odor. An animal derives most benefit from his feed when he eats tranquilly and alone. He is inclined to bolt the grain when in company. The oats when bruised are more relished than when pounded. The new practice of regulating the feed by weight, instead of by measure, is now becoming general.

In Prussia each regiment purchases its own fodder, and care is taken to reject oats that have sprouted, from lying in sheaves on the soil till it has received rain. This detestable practice is the consequence of the difficulty of threshing oats with the flail when not slightly germinated. Horses fed exclusively on hay lack energy and vigor. Green soiling is not suited for those employed in hard work. Lucerne and clover are better green fodders than vetches and maize. The latter are more suitable for cattle. Every animal requires a certain volume of food to maintain the natural distension of the stomach; that is to say, concentrated food alone could not sustain life. In Prussia, rye straw is given to horses along with oats. They do not eat the straw willingly; so that when the horses are pronounced unfit for service, and are bought by farmers, they are ever attacked by colics in receiving the new rations, because the stomach and intestines have been contracted by the bar-rack rations, and time is necessary to enable them to return to their normal volume. Hay is

of different qualities, and the feed of oats ought to be proportionate to the quality of hay. The latter, if from marshy land, is not equal in point of nutrition to good oat straw. Hay from irrigated districts looks well, but is not very nutritive; the best comes from a calcareous soil of mixed grasses, mingled with aromatic plants. Rye straw is only good for litter; wheaten straw is relished by horses in the night, and oat straw at all times. Carrots are more refreshing than nourishing for horses; turnips are next to worthless, but Jerusalem artichokes are good. In Bavaria, post-horses are fed on potatoes in place of oats. If the former be mixed with bran, so much the better. Bran fattens rather than imparts vigor, and that from rye is preferred in Germany to that from wheat, and sells at a higher price even. For horses having but little time to feed, bread is excellent, but should never be given fresh. In some garrison towns, livery keepers contract for the refuse bread of the soldiers. Linseed cake dissolved in water is good for nursing mares; rape cake when cheap is given to horses. Respecting beech-mast cake, that cattle and sheep eat with such avidity, horses will not approach it; hence the remark, it is for them a "poison." The strangest of all diets is sawdust; yet the barge horses along the Moselle and the Sarre daily mix it with the feed of oats. It is slightly nutritive; but its efficacy lies in its maintaining the necessary expansion, or volume, of the stomach.

#### The Functions of Lime.

Dr. Hellermann having drawn attention to the large development of lime in the germination of potato tubercles, chemists have turned their attention to the role of lime in vegetation.—Stohmann has demonstrated the necessity of lime to produce the necessary functions in vegetables. Mayer maintains, lime is required for the assimilation of carbonic acid. Sachs admits it penetrates in the cellular membrane, and Holzner holds that it is the vehicle for phosphoric acid in the formation of protein. Böhm has demonstrated that lime is indispensable to the young plant, to enable it to utilize the nitrogenous matters in reserve and surrounding the embryo; that it acts for the vegetable the part that cartilage serves in the structure of bone. On the whole it is not clear, whether the role of lime be that of a solvent, or for the transformation of matters into cellular tissue.

#### Fallowing—Items.

In his voluminous work on the physical properties of soils, Professor Wollny, of Munich, as the result of a series of experiments, shows that a soil in fallow is warmer in summer and colder in winter than one under vegetation, and, further, that it retains more water. The cultivated soil may be fresher in appearance, which is true, but only for the immediate surface. He finds that land under fallow contains four times more of carbonic acid than that under crops; proof, that organic matters are undergoing greater fermentation, and attest the popular favor still attached to fallowing.

The invasion of the phylloxera continues to extend, and the presumed cures to multiply. It is necessary to correct one misapprehension, viz: that strong manuring can enable the vine to

resist. It certainly does aid to do battle; but nothing proves that it has ever beaten back the foe. There is a general tendency to observe more minutely than ever the habits of the insect. So far, good; a mortal enemy cannot be too well known.

The rain which has succeeded the drought of May has proved most salutary for all crops, but it would be rash to yet prognosticate the prospects of the harvest that a few weeks must decide. The agricultural community is happy at the relief of machinery being henceforth allowed to enter France duty free, and the prospect of reducing the sugar tax 40 per cent. causes the beet interest to skip like little hills.

Paris, June 19, 1880.

F. C.

#### Deer Creek Farmers' Club.

The regular monthly meeting of the Deer Creek Farmers' Club was held at the residence of Messrs Silas B. and George E. Silver, on Saturday, July 17th.

In the absence of the President, Mr. John Moores was called to the chair. A committee of inspection, consisting of Messrs. Archer, Ball and Munnikhuyzen, after inspecting the farm, &c., reported, commending the enterprise and energy of the proprietors. In the first place they examined the corn-house, which is covered with slate and slatted all around. The committee thought it would be better if stripped on the sides. A cattle fastener invented by Mr. George E. Silver, and used in the stables, attracted attention. The committee thought it a valuable invention—simple, durable and cheap. The sheep, consisting of 112 ewes and 40 lambs, looked well. Two hundred and fifteen lambs had already been sold. Their field of corn looked well, and 15 acres in tomatoes looked promising. The Messrs. Silver are about to engage in the business of canning corn and tomatoes, and the committee were invited to visit the canning house, where hands were employed in making cans. The cattle on the farm, 58 head, though not of the best quality, were such as will fatten well. In passing from one field to another the committee crossed a fine turfy sod, which had not been plowed for many years, which led the chairman, Mr. Archer, to remark that he thought it does not pay to keep a sod so long. The Messrs. Silver reported only a moderate yield of wheat. They have for a year or two engaged to a small extent in cultivating tobacco, and with encouraging success. Their crop this year looks flourishing. Altogether, the committee regarded the farm as one of the best in the county, and were pleased to see that its reputation was so well sustained.

Mr. Moores and other members remarked that the Messrs. Silver should be especially commended for their enterprise in embarking in new pursuits, while at the same time keeping up their large farm.

#### When to Sell Crops.

The question for discussion was: "When to sell and how to determine upon the time of selling farm products?" and we are debtor to the

*Egis* for the following report of the views of the club:

Mr. Geo. E. Silver remarked that the question was one which every farmer who has a bushel of wheat or corn to sell must consider. The markets are so unsettled by speculation that it is impossible to determine what is the best time. He thought that if one time is better than another, it is as soon after the crops are harvested as it is possible to get the crops to market without inconvenience. By holding wheat a great loss occurs from rats, waste and shrinkage; besides the risk of loss by fire, and having the money lying unproductive in the crop. The average price in a number of years will be about the same. Therefore by selling in July or the 1st of August you will do as well as at any other time and have the use of your money and buildings. If convenient to do so it is better to sell the corn crop in the fall, provided you can calculate how much you need for winter feeding. It is better to sell cattle in the fall, his rule being to fatten on grass and sell in the fall. It is a good plan to have two lots, and full feed one, so as to have them ready for market in July. You will thereby be enabled to carry the other lot till September, and save your pasture during July and August. The most profitable time to sell lambs is as early in the season as you can get them to market. Hay should be sold soon after harvest, as it then weighs more. The same with oats. In short it is best to sell all crops as soon after they are harvested as you can without extra expense.

Silas B. Silver said his experience and conclusions were the same as his brother's. He had always found early sales, especially of lambs, the best.

James H. Hall wanted to know what would become of the markets if all the farmers would throw their wheat into them early. The store houses would not hold the crop. He did not know the best time, and thought it would be determined by watching the markets and selling when prices are highest. Has no regular time for selling. Last year he sold some wheat for \$1.50, and the early market was only \$1.10 to \$1.15.

Wm. Munnikhuisen agreed with Mr. Silver that it is best to sell in from 30 to 60 days after harvest, as a general thing. Whatever the rule is, it should be adhered to. Last year, for instance, wool went up. This year it fell in price. The man who sold early last year lost a little; but if he adhered to his rule this year, he made more than he lost last year. As soon as stock or crops are fit for market is the time to sell.

R. Harris Archer said some one had remarked that speculators ruled the market and controlled it. Farmers, he thought, should make use of speculators, if that is the case. For instance if a farmer thought wheat would be higher in September, instead of holding it, with the risk of losses of various kinds, he could sell now at say \$1.12, and by putting up the margin, one-tenth, he will have the advantage of the rise, if it takes place, and lose nothing in bulk, insurance, &c. Many farmers never sell until the spring of the year, but he thought it better to sell than keep in a bulk. You can get now \$1.12 and buy for

September at \$1.08, making four cents per bushel. He would not advise farmers to go into speculation, however. In regard to selling cattle a person must be governed by circumstances, the price, whether you have grass for them, &c. If they are a fair price the 1st of July it is better to sell then, even if they are not very fat.

Wm. Webster agreed with Mr. Geo. E. Silver, but not with Mr. Archer, about farmers speculating in wheat. Wheat should be sold as soon as harvested, and let speculators take the risk and make the money. If he wanted to hold his crop he would pay for storing it, but would not sell and buy for future delivery. If cattle are only half fat and he was offered a fair advance he would sell at any time. The best market for corn is on your own farm. It is different with hay. When farmers can run one or two loads to market a week, they should sell early. Was opposed to farmers holding any crop if they can get a fair price. By early selling you avoid losses by shrinkage, &c., more than will be made up by higher prices.

Geo. R. Glasgow said that taking one year with another he preferred to sell early. He sells lambs early and cattle as soon as he can get them fat. There is a great waste in keeping grain over winter.

Johns H. Janney said the question should be discussed as it affects us, not as it affects the world generally. If a man could tell the best time to sell or buy he would soon become rich. Taking one time with another, it is best to sell early. In this section we must sell before the canal closes or carry over until spring. He had adopted the plan of delivering wheat after harvest and hauling back fertilizers. If a farmer wishes to speculate by holding his crop, he should sell and buy at option. It is a great expense to store grain. Cattle should be sold as soon as fat, and lambs as early as possible. Lambs are worth one-third more by Easter than in June.

Horace F. Whiteford's experience was in favor of early sales. Corn loses a great deal in holding over, and 50 cents a bushel in the fall is equal to 58 or 60 cents in the spring—counting the loss by shrinkage, &c. He also believed that \$1 for wheat in the fall would pay as well as \$1.25 in the spring. The shrinkage in crops is more, perhaps, than most farmers count.—Early selling, besides avoiding losses by rats, &c., saves one or two handlings. Pork should also be sold early. Hogs fatten more easily in warm weather and bring a higher price. It generally pays to keep hay over, as the loss in weight, after the first heating, is not great.

S. Martin Bayless said his plan was to sell his grain at different times. A portion of his wheat he sells as soon as it is threshed and a portion he keeps until spring. When corn is not a good price in the fall he keeps it until the spring and sells it to buy bone dust. His hay is sold in the spring, after he has quit feeding. He sells his cattle off the grass in the fall.

Benj. Silver, Jr., Secretary, did not differ with the majority of the members, and believed in early sales.

John Moores believed in selling wheat soon after harvest, but like Mr. Bayless he generally



made two seasons, one after harvest and the other during the winter or spring. When he has any surplus corn to sell, he waits until after harvest. He sells his cattle, fat or not fat, to the first buyer who comes along and offers a good advance. Sometimes it pays better to keep them until fat, especially if they are a little rough.—Farmers generally are forced to sell early, for want of money. Farmers with plenty of money frequently hold crops too long. In the long run the man who sells early does the best. He is somewhat at the mercy of speculators, it is true, but they are as liable to mistakes as other people. Adjourned.

The next meeting of the club will be held at Mr. Wm. Webster's, August 21st. Question: "What is the best time and manner of using barnyard manure?"

### Live Stock.

#### The Sheep's Foot—Care and Neglect of it.

Foot-rot is a most destructive disease of sheep. There is an incipient and easily preventable and curable form of this disease, and there is a malignant and contagious foot-rot, which infests and poisons the soil, and spreads sometimes with fearful effect among large flocks, destroying the sheep by hundreds and thousands. The malignant form grows out of the other, and it is questionable if it could not be prevented from spreading among the sheep, even from infected ground, if their feet were only in good condition. But the sheep's foot is seldom in good condition naturally, because the shepherd rarely thinks it necessary to examine it until something wrong is evident from the lameness caused by it. Then precaution comes too late. The manner of growth of the sheep's foot is peculiar, and upon this depends its proclivity to damage and disease. The walls of the hoof grow from above downwards, meeting the growth of the sole at the junction; the outer layer of the former being produced indefinitely, and, if not worn away by contact with the ground, press the sole and spread beyond it, turning under, and forming a loose covering, beneath which moisture, filth, sand, stones and other foreign matter find a lodgment. These foreign matters soften the horn of the sole, or otherwise injure it, so that disorganization or destruction occurs, and carries the injury into the interior of the foot. Stones or gravel that may be enclosed under the excess of horn press upon the softened sole and irritate the sensitive tissues under it, and although as yet no actual damage may have occurred, yet the sheep is unable to walk upon its feet, and moves about on its knees. When this is seen, no time should be lost in examining the flock, and remedying the mischief while this can yet be easily done. The feet will probably appear with the walls of the foot having outgrown the sole, and not only turning under at the sides, but turning up at the toes, thus preventing the natural use of the feet. This is to be remedied by the use of a pair of toe-nippers, made especially for trimming the feet, and also by the use of the knife. The

walls of the feet are trimmed at the sides with a knife, and all superfluous horn is removed. The toes are clipped with the nippers; a pair of common pincers may be used if the edges of the claws are filed and ground sharp. Neglect of these precautions has ruined many flocks, while the pastures have become so poisoned with the disease and infectious matter that no healthy sheep could be kept upon them, until after an interval sufficient to rid them of the contagion. The result of neglect may be described as follows: The horn of the sole being softened and decomposed, as previously mentioned, and the sensitive inner portions of the foot being injured, inflammatory and suppurative action is caused within the foot, escape of the products of inflammation being impossible through the sole at first; intense suffering results, and a generally disturbed condition of the animal ensues. This is the first stage of malignant foot-rot. In course of time the sole is decomposed, and fetid pus escapes, by which the herbage and soil are infected. The disease spreads through the whole foot, and appears at the coronet. Fungoid or mushroom-like excrescences appear on the sole and at the coronet, and, if neglected at this stage, the whole foot may be lost and the sheep ruined. In this condition, radical treatment is needed. The sound animals should be removed at once to new and clean pastures, or into a clean yard. The diseased sheep are to be treated by means of caustic dressings of the feet; hydrochloric (muriatic) acid, diluted with three times its bulk of water; a solution of one drachm of chloride of zinc in a pint of water, or carbolic acid should be used to destroy the diseased growths, and persevered in until sound parts are reached, when the usual stimulant dressings may be substituted. The sheep should be kept on a clean floor, covered or well dusted with air-slacked lime, or in a dry, clean, soft pasture, which should be plowed so soon as its use by the sheep is no longer necessary.—*American Agriculturist*.

#### Castration of Animals.

**Age.**—As regards age, the young usually suffer less than the adult; and the suckling animal has much in its vigor, in its rapid growth, and in the stimulating quality of its animal food, to induce a healthy action on the wound and an early healing. At this early age, too, the testicles are relatively smaller, so that their removal is less likely to produce shock, constitutional reaction and fever. In colts the danger increases from two years old and upward, or, in other words, as the organs become more fully developed and the masculine functions become active and come to be a controlling power in the system. Many other conditions usually determine the time (age), as, in horses the desire for a heavy forehand, a graceful carriage, better vigor and endurance, a delicate, mobile neck, a fine mouth, a long rein, etc., but these are apart from the present question, which is one of safety only.

**Health.**—Perfect health is essential to safety. Any pre-existing disease is pretty certain to be aggravated by the irritation and fever resulting from the operation; any impairment of the

nutritive functions will retard the process of healing in the wound, or induce an unhealthy action resulting in permanent injury or death. If disease germs are in the system, their development is hastened, and the system has to bear the attack of two different troubles combined; or both concentrate their action on the same point, and the extension of the diseased action to the susceptible structures of the abdomen too often precipitates a fatal result. Thus, strangles, so common in young horses, causes a low type of inflammation in the groin, with exudations, adhesions, abscesses, and even gangrene. Glanders, too, is attended by the development of the glandular material in the wound and elsewhere, and always by a fatal issue. Scarcely less injurious are influenza, catarrhal fever, bilious fevers, etc., etc., the seeds of which find a fertile field for their development in the system fevered by the operation.

The system most favorable to success is one in high condition, with full, hard muscles; clear, bright, prominent eye; smooth, sleek, healthy coat; pulse full, strong and regular; and spirit lively and ardent. The best condition is, in short, that of the trained animal, in which the wounds heal with that marvelous rapidity which we see in the athlete or race-horse. It is not the fat animal, soft, flabby and deficient in endurance, but the one that is all muscle and sinew, and that will not tire. Yet, even with this it is important to give daily exercise after the operation. If kept up in a stall, the animal accustomed to regular exertion quickly becomes plethoric, and thus his great powers of digestion and assimilation conduce to unhealthy rather than healthy action in the wound. If such an animal must stand in the stable after the operation, his fine condition will be rather prejudicial, and should be reduced somewhat by a dose of physic prior to the operation, and a restricted diet after. A very fat animal may be advantageously treated in the same way. The very poor are liable to have the healing process retarded, and to have a low type of inflammation in the wound, with extensive swelling, gangrene or inflammation of the lining membrane of the abdomen, or, in less redoubtable cases, local abscesses, or tumor of the cord. These should have their condition improved before they are castrated.

No male should be castrated until it has been ascertained whether there is any hernia (rupture) into the scrotum. The sack of the scrotum should contain nothing besides the testicle. Any descent of abdominal organ may be felt at the front and sides of the testicle, and the thickening will be continued upward beside the cord into the abdomen. If pressed it will return slowly at first, and then suddenly and completely. Such subjects should be left to the veterinarian for a special operation.—*Nat. Live-Stock Journal*.

#### Hooks in Horses' Eyes.

At the inner or inferior corner of the horse's eye is situated a cartilaginous, shovel-formed body—the *cartilago nictitans*—which has for its motor a distinct fasciculi of muscular fibres,

running to it from the *depressor oculi*. This body is familiarly called "the haw," or "the hook." It acts as a third eyelid. When a foreign substance gets into the eye, the irritation thereby occasioned causes a copious flow of tears, which wash the body to within the "haw," and, at the same time, loosens its hold upon the surface of the eyeball. The pain occasions the retractor muscle to act repeatedly and forcibly, which propels the shovel-like haw suddenly and frequently over the eye, by which motion it effectually takes up and removes any particle that may be within reach of its action. We have given this short description of the haw and its functions for the purpose of making it clear that, by cruelly and unnecessarily removing it from the eye, the animal is thenceforward deprived of almost the only means possessed for the purpose of removing any irritating foreign substance from the eye, and that consequently untold torture must be endured by an animal thus barbarously treated. This organ, like any other part of the eye, is, however, liable to accidental injury and disease; but such condition is generally amenable to proper local applications, and does not, as a rule, require the use of the knife. In the case of lock-jaw, the protrusion of the haw, especially when the horse's head is raised, is a well-known symptom. We were once called to attend a horse suffering from lock-jaw which had just been operated upon by a miserable brute of a "hoss doctor," who induced the owner to believe that the animal's condition was due to "the hook," and that he could cure the horse by pulling them out and cutting them away. We have no doubt that, with the prevailing ignorance among people as to animal diseases, and the almost utter absence of qualified veterinarians in the greater part of the United States, many cases of so-called hooks, for which a remedy is asked, or in which the haw has been cut away by unscrupulous quacks and impostors, are nothing less than veritable lock-jaw.—*Nat. Live-Stock Journal*

#### Heaves in Horses.

Prof. Law says: Over-feeding on clover-hay, stanfoil, lucerne and allied plants—on chaff, cut straw and other bulky and innutritious food,—in countries where there is no long winter feed ing on hay, and in sections where clover is not used, heaves are virtually unknown. It advances just in proportion as clover hay is introduced as the general fodder for horses, and it disappears in localities where clover hay ceases to be fed.

The treatment prescribed is as follows: Place a couple of stones of unslaked lime in a tub or barrel of water, and put a quart or two of lime water in each pailful of water he drinks; also dampen his hay and oats with lime water. Shake all the dust out of his hay; he would be better on grass. Do not allow him to fill the stomach with either hay or water, especially before a drive. Give him drachm doses of tartarized antimony at night in feed, and in morning give drachm doses of pulverized digitalis.



## The Poultry Yard.

By G. O. BROWN, Montvue Poultry Yards,  
Brooklandville, Md.

August is a severe month on fowls. A great many make a great mistake thinking at this season of the year fowls can pick up enough, and that it is unnecessary to feed them. The old fowls are now moulting, and it is a critical time with them; they need nutritious food, and should have a tonic of some kind. Stale bread is good if soaked in ale and fed in the evening about twice a week. There is a preparation known as the "Douglas Mixture," which is used very extensively by fanciers and regular poultry breeders during the moulting season. It is made as follows: One-half pound sulphate of iron, one ounce sulphuric acid and two (2) gallons of water. Keep it in a corked jug, and to each pint of water given the fowls to drink, add of this mixture about one teaspoonful, and keep it up for at least four weeks. Some, no doubt, may say our fowls come out all right, and they don't get any extra care. So they may; but fowls thus given a little extra attention, at this time, are *sooner* through the moulting at least one-third less time, while the feathers come out stronger, brighter, and the fowl is prepared to meet winter warmly clad and in good condition; and you may look for eggs in winter *only* from hens that were early through their moulting.

Have you secured road dust for the fowls' dusting bath? If not, do so this month. Secure it when warm and dry, and put it away in barrels for winter use. If the fowls are pestered with vermin, take a half-barrel of dust and put it in under a three-foot-square sash that has boards eighteen inches high under it, with a single opening for fowls to go in; add to the dust a pound of sulphur (flour) and they will soon rid themselves of the vermin. Whitewashing the interior of the hen-house should again be attended to; see that every crack and crevice is filled with the wash. Late-hatched broods will need extra care.

### What Fowls to Keep.

A very cursory glance of the advertisements of poultry for sale, will satisfy any one that Light Brahmas are the most in demand; next Dark Brahmas; next Houdans and Cochins;—Leghorns being bred by comparatively few breeders.

Question second—Are pure breeds preferable?—is only half answered. Certain varieties of pure-bred fowls are equally hardy as the half breeds and crosses. All the Asiatics, Houdans, Games,—and, in latitude of Philadelphia, Crevecoeurs—are perfectly hardy.

Question third—Which fowls are best layers?—I think is answered very erroneously. In the first place, Aylesbury ducks are not generally thought to be as good layers as Rouens. Taking the question as it reads, "Which fowls are the best layers?" I answer, the Crevecoeurs will lay a greater weight of eggs in the year than any other variety; next to them are the Black Spanish; next, Houdans. If the question was, Which

lay the greatest number of eggs? even then the Leghorns would not lead,—the Silver Hamburgs being first, Golden Hamburgs next, and then Leghorns. The Hamburgs lay very small eggs; three Leghorn eggs would probably equal in weight four Hamburgs.

The next question—Which grows fastest and makes most desired meat—is all muddled up.

The Crevecoeurs grow the fastest, but rarely dress over seven pounds,—while the Brahmas will dress ten pounds and over; so will the Cochins.

Put the question in a different shape—Which breed will dress the heaviest at three months old?—and the answer is Crevecoeurs; next to them Houdans, and next the Brahmas. But at eight months the Brahmas will dress a great deal the heaviest, as they are a much larger fowl. Vary the question again—Which breeds lose weight in dressing?—and the answer is Crevecoeurs, Houdans, Dorkings, Games,—the Crevecoeur and Houdans both being specially noted for that quality, the amount of bones and offal in each being but a very small percentage of the gross weight.

Question five—For eggs and flesh both, which excel?—and six—For flavor and tenderness of flesh, which breeds excel?—may be answered together. Crevecoeurs and Houdans; (Dorkings and Games can only apply to question six.) In proof of this I will quote what the French themselves think of them:

"This breed (Crevecoeur) produces some of the best fowls which appear in the French market. Its bones are even lighter than those of the Houdan; its flesh is finer, shorter, whiter, and more readily takes on fat. The pullets are of extraordinary precocity, since they may be put up to fatten at the age of three months, and they are ready for the table in fifteen days after. At four months old a fowl of this breed has reached its full perfection as to weight and quality. A Poularde of five or six months attains the weight of 6½ pounds when fatted, and weighs 4½ pounds when dressed for the cook. \* \* \* \* The Crevecoeur is the first breed in France for delicacy of flesh, ease and precocity of fattening; and we believe it to be the first in the world in these respects.—A. M. H. in *American Poultry Yard*.

The above answer to "what fowls to keep" is the best we have seen, and in the main agrees with our opinion. We think, however, the Leghorns will lay more eggs in twelve months than *any other variety*. We have tested them against the Hamburgs in same-sized yard, same number, treatment alike, and both white and brown laid the greatest number. The Hamburgs laid later in the summer than the Leghorns, but the latter laid in *cold* weather, and the others could not be induced to do so. Some months since we gave an excellent cut of Crevecoeurs. The great objection to them in this country is they are delicate, do not become acclimated, and all who have tried them have found them very subject to croup. In many of our poultry shows they are the only birds that get sick. The Houdan in France now-a-days is crossed with the Crevecoeur, so much so that in England they complain of being unable to import any pure-bred birds.

G. O. B.

### Give it a Trial.

It has always been an anomaly in the annals of poultry breeding that farmers, who have for centuries been the universal keepers of feathered stock, should resolutely deny themselves the pleasure and profit to be derived from giving even common hens the benefit of the most matter-of-course attentions, which they never hesitate to lavish on the horses and hogs. It has long been an accepted rule with farmers that pigs in the Eastern States represent, as dressed pork, the value of the food given them, and that the profit in keeping them is represented by the manure. Applying the same method of reasoning to well-cared-for poultry, shows such a decided balance in its favor as ought to open the eyes of the most bigoted. Many, or in fact the majority of the best men who make farming a scientific pursuit, keep pure-blooded poultry, as well as blooded live stock of other descriptions, and find that "folks in feathers" are as profitable as anything they raise.

When the comparatively small cost of starting with a fair number of first-class fowls, and the rapidity with which they reproduce themselves and become ready for sale is considered, they must compare very favorably even with \$30,000 cows, or any single object of special worth.

All these considerations should be very influential in determining farmers to give poultry a fair chance, and in feeling that in so doing they run little risk of failure. We urge all farmers, whether they are engaged in this pursuit little or much, to give the thing a year's hearty, intelligent trial, and see if the advice we give has been prejudicial to their interest or not. Let every man who has never tried it devote a little serious thought to the subject, and follow his thinking by serious and intelligent work, and when he brings in a full egg-basket during the cold weather, when the fowls never used to do anything but mope, when, as Mrs. Partington says, "eggs is scarce an' high," he will own that poultry properly treated are among the farmers' best friends. Give this a trial. If people who are engaged in other business can make fowls pay, why cannot the farmer, whose whole life-work lies in the direction of similar pursuits, do as well?—*America's Poultry Yard.*

### Keep the Roads in Order.

Keep it before the people, that the trouble with the country roads is that we hurrah, boys, and spend a pile of money somewhere, and leave our work—our work, mind,—no matter whose shovel did it—without the subsequent care needed for its preservation. We never shall have good common roads until individual property-holders along the highway are ready to take pains to stop this waste, and give some care to their road front, wherever the town has fixed it for them, at least. Making a good road along streets, where the people don't care for it, is casting pearls before swine. There are many places in the road where a barrow-load of gravel, settled with a pail of water, will prevent a bad cradle-hole, and where a few shovels of earth with the back of a bay-rake, at a water-bar before a shower, will prevent a bad wash-out.

### The Dairy.

#### Take Care of the Milkers.

The care of cows during the hot season, says the *Utica Herald*, is one of prime importance to the dairyman. This is the season when they necessarily shrink in the quantity of milk given unless properly fed and looked after. The results attained by those who take pains to keep up the flow of milk in their herds show that it pays to supplement the food taken in pastures by regular feeding in the stables. You cannot get milk unless the animal has food to make it from. When pasturage is short and scarce, and it takes about all the animal can crop to sustain life, extra food is a necessity if a respectable yield of milk is expected. Nutritious soiling with whatever the farmer happens to have, whether corn, or oats, or rye, will do much toward sustaining the flow. It is even more profitable to feed grain, or shorts, or meal-cake, when pasturage is thin, than to allow the cows to dry up. Drink should be given at regular times. Twice a day, when the cows are brought up to be milked, morning and evening, is often enough, even in the hottest weather, and frequently they will drink only once. The food upon which they live contains from 60 to 80 per cent. of water, and this succulence supplies a large portion of the moisture needed. If cattle are watered in this way at a trough or brook of clear running water, they will not need water in the pasture, where it is often swamp water or otherwise impure and filthy. Extra feeding also allows cattle to lie down in the shade during the hottest part of the day, which is a desirable thing. It has been said that excessive heat is more injurious to a milch cow than short feed. Shade in the pasture is therefore almost a necessity during the hottest part of the summer. Flies also are extremely irritating to cattle at this season, and there seems to be no means of avoiding them. If the farmer is lucky enough to own land bordering upon a large creek or stream, the cows can go into the water and stand for a time, switching the water up to their backs with their tails, and thus keeping themselves comparatively free from annoyance of insects. But as this is not often the case, the giving of extra feed will permit the stock to rest a portion of the time, and the exertion is not so great in driving off the flies as when they are obliged to crop the pasture and whisk their tails at the same time. In fact, too good care of cattle is impossible at this time of year, and the man who makes the most out of his herd is the one who treats them with the greatest generosity.

### Washing Butter.

A few years ago an earnest controversy was carried on as to whether butter should be washed or unwashed, those advocating the latter claiming that by pressing or working out the buttermilk without the aid of water it served to retain more of the aroma and delicious flavor naturally belonging to butter, and which should not be removed by allowing the butter to come in contact with water.

On the whole the advocates of washing butter were the most numerous, and as the art of butter-making has progressed they have had rather the best side of the argument. Of course it will be understood that good, clean, sweet water must be employed in washing butter, and that it never should come in contact with water having taints or odors of any description.

The best butter-makers of the present endeavor to avoid working butter as far as possible, in order that the "butter-grain" may be kept uninjured and preserved in all its integrity. To accomplish this object the cream must not be *overchurned*, for the butter is often seriously impaired in the grain by too much churning. When the butter begins to form or is in small particles about the size of wheat kernels or a little larger, stop churning. The butter is then in a granulated state, and the buttermilk may now be drawn off, and the grains of butter can then be washed with cold water and afterwards with brine, which will free it from all milky and caseous matter. Some drain the buttermilk from the churn in a hair-sieve, and then wash by turning water on the butter in the churn.

Butter treated in this way is never salvy or greasy, but remains with its grains uninjured, and should therefore be in its best state. Thus as our knowledge of what constitutes perfect butter obtains, together with the art of producing it, the old method of working out the buttermilk without the aid of water must be pushed aside for a more intelligent and safer practice. In conclusion it may be remarked that, whatever working is required, care should be taken to avoid a grinding motion, as this injures the grain. If a lever-worker be used the working should be by pressure, and the lever should not be allowed to stop or slide on the butter in a grinding fashion.

Butter-making may now be said to be approximating rapidly to a high art. Consumers are fast being educated to distinguish the finer grades, and now regard with disgust those greasy, salvy and rank flavors which a few years ago could perhaps be tolerated. This is as it should be; for the old-time poor butters were not conducive to health, and were the cause many times of serious ills which the more educated taste now avoids. Of course we do not dispute the fact that large quantities of poor butter get upon the market, but the prices for such are so low that they do not pay the cost of production, and this helps to raise the standard; for price has a wonderful influence in stimulating to better methods, which the enterprising dairyman soon tries to reach. The creameries and butter factories have been great educators to butter dairymen, as they have been to the taste of consumers, and the spread of these institutions, with the knowledge they disseminate, will, we trust, at no late date wipe out the great bulk of inferior and low butters.—X. A. WILLARD, in *Country Gentleman*.

According to Prof. Atwater, the average butter product of Orange Co., N. Y., cows is 186 lbs. a year, and for those of the whole country 125 lbs. This is too low!

## Horticulture.

### Notes from the Eastern Shore.

*Messrs. Editors American Farmer:*

As many of the early varieties of apples, peaches and pears have already matured here, a few notes relative to their behavior may not prove uninteresting to your many readers. Beginning with peaches, which of course is pardonable in an "Eastern Shoreman:" Amsden and Alexander fully maintained their past record for superiority in size as compared with Beatrice and Louise, and were a full week earlier in ripening. As to any difference in the first two varieties named, I fail to discover any whatever, either in tree or fruit. The Early Rivers, ripening just before the Hales, has added to the popularity it gained last year with our growers, though the skin is quite tender, and I fear that in the event of wet weather at its season of ripening, it will exhibit a strong tendency to rot. Out of fifty varieties at a bearing age on my grounds, there were but five that withstood the effects of the late frosts satisfactorily, viz: Amsden, Alexander, Beatrice, Louise and Rivers.

In apples the field for observation has been broader,—the Early Ripe, as heretofore, producing fairer (and I think *better*) fruit than any of the others; though Primate is certainly a dangerous rival. Tetofsky and Fourth of July were no earlier this season than Primate, and in fact Red Astrachan, Golden Sweet, and Sweet Bough, are in season with Early Harvest and Early Ripe. Striped June poorer this season than ever before. Fanny promises well; good size; better quality than Astrachan, but not so highly colored. Cross, a new Maryland summer variety, fruited sparingly for the first time this season, and were there there no other points of excellence to recommend it, its size alone will make it popular, when once known as well as the older kinds named above.

With pears I have not had a long list of early kinds in bearing this season. Doyenne D'Eté was first to ripen, and because of no other being ripe at same time, was esteemed perhaps higher than its real merits would justify. The old Maynard hides some of its "sins" by its prolificacy, but even in this particular the Jargonelle or Summer Bell makes a failure. Osband's Summer, though, serves to compensate for the palpable defects of the Jargonelle, as they are certainly as fine as I would desire—better this season than I ever before saw them.

And now a word in relation to the Wild-Goose plum, about which so much has been said and written. Whatever may be the merits of this fruit elsewhere, whether worthless or otherwise, it is certainly a success on this shore; that it is a sure bearer the experience of the past five years demonstrates conclusively, and that it is profitable is attested by the returns made by the commission merchants. The first this season sold for 15 cents to 20 cents per quart. (Shipped in berry crates.) I have had them to sell for 25 cents per quart in Philadelphia other seasons, but then they did not keep up in price as well to the close of the season.

This season closed up with a request from my commission merchant to "send in more plums; the demand is brisk; can raise price to 20 cents per quart again." Truly, "the proof of the pudding is the eating of it." Those who buy it eat it, and are willing and even anxious to buy it again at advanced prices, certainly have a fondness for "the pudding." Don't you call that sound logic, Messrs. Editors?

I may, perhaps, as the season advances and the heat decreases, send you a few additional notes on some varieties of fruit not yet ripe. [Please do.—Eds.] Very truly, &c.,

Denton, Md, July, 1880.

J. W. KERR.

### Raspberries.

The agricultural editor of the *Religious Herald* gives his experience with this crop as follows:

We have an acre in cultivation, but 1,200 square yards is occupied by canes set out last year, and hence bearing the first crop, which is, perhaps, never more than one-fourth of a full yield. We have, then, only three-fourths of an acre in full bearing. We commenced gathering May 25th, and finished July 12th, 49 days. The yield was 885 quarts. We sold 792 quarts for \$228.88, an average of 29 cents per quart. The crop left us \$183.32 after paying for picking and huckster's commissions. The amount is not large, but it was an important factor in our resources, when we proceeded about 1st of July, as is our annual custom, to discharge our obligations in obedience to the apostolic injunction: "Owe no man anything, but to love."

We suppose the yield from the three-fourths acre in effective bearing was 800 quarts. For ordinary seasons this yield would be small, but it is certainly large for a season so dry that other crops maturing at the same time were well-nigh absolute failures. Look at the table of rainfall which we gave two weeks ago. The amount of rain during April, May and June, was only 4.81 inches, the average amount for that period being 9 to 10 inches. The raspberry is considered a thirsty plant, yet it stands drought, according to our observation, better than any other crops maturing about the same season of the year.

As to the cultivation of raspberries, no rigid rules can be given, because circumstances will demand a modification of any mode. We set them out in the spring as early as practicable, making the rows six feet apart and the plants three feet in the row. Keep the ground well stirred and clean by plow and hoe until cold weather sets in, and the plants so clipped that the canes will stand erect. Mulch with stable manure in December.

As soon, in the following year, as the canes are done bearing, cut them out and also the feeble young canes, leaving four or five in a stool. The young canes should be clipped and kept moderately short. By this treatment they become thick and strong, and will need no support.

The general lack of success is due to lack of cultivation. The old canes are allowed to remain until the next spring; the young canes are

not taken in hand perhaps until the same time, when their great length and weight bear them to the ground, and hence they can be kept erect only by supports; weeds and grass are allowed to occupy the ground. I am now cutting the grass out with hoes, because the land is too dry to be plowed. As soon as it rains, I shall turn the dirt, by four furrows to the row, to the canes, throw it back next time, using a small mould board, and continue to plow and work until frost, as the condition of things may indicate. We always leave the land level at the last plowing, and are particular to keep the ground clean all the time.

### Floriculture, &c.—August, 1880.

By W. D. BRACKENRIDGE, Florist and Nurseryman,  
GOWANSTOWN, Baltimore Co., Md.

#### Pleasure Grounds.

There is at the present day a vast multiplicity of designs brought forward by the owners of property and their advisers, destined to embellish the grounds surrounding their residences; which, apart from convenience of approach, have in view the adornment of the same, to the best advantage which the nature and lay of the ground and the size thereof may admit.

And here we would say, that straight roads for small places of two or three acres, are in better keeping than curved ones; the latter being more appropriate where the area of land embraced may be called a park,—say from four to fifty acres.

The most glaring evil which we see prevailing in the carrying out of all such improvements consists in the lack of judgment evinced in the selection and placing of trees, both as regards shade and effect,—together with the characteristic habit and ultimate size to which a tree will attain. These points ought to be well known to the planter; if this is not so, then a few years growth will reveal the fact that many things are sadly out of place.

Shade is necessary; but no tree should be planted so near to the dwelling as to detract from its style of architecture. And, moreover, a dense shade near a house is detrimental to the health of its inmates.

Lines of trees along the edge of a drive through the lawn, destitute of groups of other trees to relieve them, is, to our mind, out of place, and tend to mar the scene. As to the kinds of trees suitable for such lines, we would select the Sugar Maple or Tulip Poplar, both of which are clean erect growers, and not liable to be attacked by insects.

The Norway Maple is better suited to plant on the lawn as single specimens, or to form groups in company with others,—either mixed or in masses of one kind.

In order to produce immediate effect, trees are usually planted closer to each other than what they are intended ultimately to remain, with the intention that so soon as they begin to close in upon each other, that thinning is to be had recourse to; but sad to relate, when the proper time comes for this necessary operation, courage fails the owner, and he puts the work off



from year to year until the trees in the centre of the group become attenuated, and those on the outside lopsided, and under such circumstances it is better to let the whole grow into one mass, as a reminder of former times. In Baltimore county are some striking examples of the forethought and wisdom of a few gentlemen, in the selecting, planting and after-care of trees planted on their lawns, and as the oldest examples of the kind we cite that of Reverdy Johnson, Esq., Govanstown, where a selection of fine trees was planted many years ago, by the late Joseph Patterson, and now his foresight and judgment in arboriculture are evinced by the noble specimens of fine trees adorning the lawn of that delightful homestead; and in the same direction we would not overlook the very judicious distribution of ornamental trees on the charming lawn of W. H. Perot, Esq., where each kind has been given space enough to develop its true character, as may be seen in the elegant examples of Norway maple, Austrian pine and *Magnolia macrophylla*, &c., &c. But if people desire to have thickets of trees and bushes on their lawns, against which we raise no objection, then the idea should be to let the whole mass run rampantly wild, trusting to mother nature to bring something ornamental out of such a group, which we believe would be better than trusting to the training and pruning system of amateur and ignorant landscape gardeners.

Do not permit weeds to run to seed on your flower beds and gravel walks, but have the hoe constantly at work in keeping them under. By so doing, they will annually decrease in number.

Pinch back any foliage plants as need it, while such articles as *Salvias*, *Heliotrope* and *Petunias* should now be encouraged to produce abundance of flowers in the fall, by giving the beds an occasional dose of liquid manure. Collect seeds as they ripen, and hang them up to dry in a shady, airy place. And *Hyacinth*, *Tulip* and Mexican *Tiger-flower* roots ought to be taken up, dried and stored away out of the way of mice, while the beds from whence the bulbs were taken can be planted with some annual flowering plant—as *China Asters*, *Phlox Drummondii*, or *Portulaca*.

#### Greenhouse.

In this department during the present month there is not much work to be performed, save the usual routine of care in subduing insects and supplying sufficient moisture to prevent plants suffering from drought.

The tubers of *Calla Lilies* may now be repotted in a rich light compost, watering but very moderately until they begin to start to grow; perhaps it is best to keep back a portion of the stock, to be potted a month later as a succession crop.

*Lilium Auratum* and the varieties of *L. lancifolium*, so soon as the foliage begins to fade, should have the supply of water withdrawn very gradually; and so soon as the leaves and stems become dry, place the pots on their sides in a cool, dry place. The same process should be pursued with the roots of *Gesnerias* and *Gloxineas*.

If you wish to have a good supply of *Lygodiums*, *Adiantums*, *Pteris* and other ferns that hold their fronds during the winter, then now is the time to stimulate them into growth by giving them a good shift and keeping them in an atmosphere that is humid and warm.

Should bushy plants of *Chrysanthemums* be wanted, then keep pinching back the leading shoots until about the middle of September; after which, let them run into flower-buds.

A good stock of *Stevias* and *Eupatoriums* should now be grown for cut-flowers during the winter.

Any favorite specimens of tropical plants, the roots of which have become pot-bound, should be shifted into larger pots, in order that they may have the benefit of the warm summer months.

Repot *Acacias*, and, if necessary, young *Camellias* that are growing freely. Most people perform such work in spring; but we have performed this work now with success, as much depends on the care that is bestowed on the plants after being shifted.

Pots containing plants that are plunged in the ground should be examined frequently, to see that the roots are not passing into the ground. This work is easily performed by giving the pot a turn and lift upwards.

#### Vegetable Garden—August.

My endeavor to raise onion-sets by covering with two inches of sand has not proved a success; the bulbs are already too large, and are still growing. Perhaps two inches of sand beneath, as well as above, would have dwarfed them sufficiently. Onion-sets are very costly, and a cheap and sure way of growing them is much to be desired. Medium-sized onions for fall planting form a good substitute, and onion seed sown in September will, sometimes at least, bring an excellent crop in spring.

My celery seed-bed required so much watering in early summer that I propose another year to sow in a small space very thickly, and prick out where too much crowded.

In transporting cabbage and celery a good pruning is indispensable if the plants are large. It is well also to puddle cabbage if time will permit. Turnips may be sown any time during the month. Those sown early will do for the cattle, and the later sowings for family use. Spinach and Kale for fall use should be sown by the middle of the month; it is yet too early for the main crops. In potting strawberries for fall planting it is usual to sink the pots in the ground, and to put a plant in each pot, keeping it in place with a stone. It has always suited me better to let the plants root in the ground; lift and pot at the bench in good earth, and set closely together in a frame for a few days. Much finer plants are got in this way, and that is the main thing in the private garden.

The principal work this month will be to keep weeds from seeding, and to prepare land for the fall crops. Those who have land that can be plowed in dry weather should consider themselves fortunate. Land that cannot be so worked is not well suited for vegetable growing. Where

sifted coal ashes can be had in quantity, a heavy dressing will greatly benefit such land. I have applied it six inches thick, with good effect; but half that quantity plowed under will have permanent value. It may not have much value as a manure, but so long as it does no harm I am glad to get it, and would use ten times as much as I now do if it could be readily procured. Coal ashes also make an excellent mulch for raspberries and blackberries.

Of four varieties of raspberries grown here for the past three years, two have proved utterly worthless, (the *Bristol* and *Hudson River Antwerp*.) and two, the *Philadelphia* and *Brandywine*, have done right well. The *Hudson River Antwerp*, however, as I know it formerly, was rather dwarfish and an excellent bearer; its namesake here grows seven feet high, and is simply a cumberer of the ground. I threw away the *Wilson* strawberry, because, after two years trial, it bore no fruit. Could it really have been the same *Wilson* that charmed our eyes in former years? All the above came from a most reliable nurseryman, and yet it is difficult to believe the varieties were of the good old stock.

The *Sharpless* strawberry gave us a few very large specimens, but the bulk of the crop would not compare with any one of the five or six older varieties cultivated alongside. One season's trial, however, decides nothing. I saw nothing of the yellow-striped squash bug this summer, and the potato bug was easily persuaded to leave. The cabbage fly was bad as ever. Sweet corn and tomatoes are much earlier than usual this season. Both were ready here in quantity by the 13th of July,—the latter, in small lots, from 28th of June.

JOHN WATSON.

### Money in Cabbages.

There are at this season of the year, all through the country, pieces of good rich land which, from lack of time, have not yet been planted; or by the devastation of worms and insects, or from some other cause, have not at this time any crops growing upon them. The owners are now interested in deciding what, if any, crops can be still grown which will prove remunerative. If the land is in good condition, and a supply of fine manure can be procured, there are few, if any, crops which can still be put upon such lands which are capable of bringing as much ready money for the labor and expense of cultivating as a good crop of cabbages.

Having been interested in the growing of this vegetable for a number of years, I will offer a few hints to those who are in a position to be benefited thereby. The cabbage plant is a gross feeder, and, if the soil is not already rich, must be heavily manured. However, good fresh corn or potato land, which has vegetable matter enough in its composition to make it loose and lively, will produce better results than heavy soil which has been several years under the plough. If there is not stable manure enough at command to give it a good coating of that, a dressing of super-phosphate, bone-dust, or

guano, placed in the hill, or around the plant and hoed in, will answer every purpose.

Perhaps there is no vegetable with which it is more important that a good stock or strain of seeds be secured to start with than the cabbage. There is much inferior seed in the market, grown from poor loose heads or stumps, on which no head has ever been, and such seed will almost invariably produce its like. "From nothing comes nothing," is an adage applicable here.

I have for a number of years used seeds grown from large selected heads, many of them finer than can be found in our markets, and find that such will give satisfaction every time. I have grown upwards of fifty varieties in a single season, but find that for practical purposes there are three or four which combine the most valuable features of the whole.

For summer use, the *True Jersey Wakefield* and *Henderson's Summer* are unexcelled. For fall and winter, the best strains of *Large Flat Dutch*, *Fotter's Drumhead*, and *Winnigstadt* are all that is desired. The *Flat Dutch* is the standard winter cabbage of this country, and to fully mature in this latitude should be set from June 10th to June 15th. In New Jersey and further south it can be set correspondingly later. *Winnigstadt* and *Fotter's Drumhead* are a few weeks earlier, and hence can be set correspondingly later.

As the cabbages head up best during the cool fall months, the late-set plants make the finest and sweetest heads, providing they have time to mature. It is now too late to sow the seed for this season's use, and those who have not a supply of plants must purchase them instead. The plants can usually be procured in most sections at a small cost, but purchasers have less chance of knowing what kind of stock they are planting unless they purchase of some one they can trust. Good plants are plenty in this vicinity at \$1.50 per thousand, and can probably be obtained cheaply elsewhere. They are usually set two feet by three, and cultivated by horse one way; in this manner, it requires about 7,000 plants for an acre.

It is very important that plants which have good roots are set, as otherwise they are liable to perish from club-root or other disease. In my *Manual of Vegetable Plants*, published three years ago, I first advanced the theory that the little white maggots which are frequently found in plant beds, and which eat the fibrous roots off, leaving only a long straight tap-root, are the larvæ of the striped flea beetle, and that to escape the maggots the flea must be kept off. This theory received considerable criticism from other writers, but no one has as yet been able to disprove it, and from further experience I am more than ever convinced that it is correct, and should not now think of growing healthy plants without endeavoring to keep the flea beetles off from the start. Plants set during the latter part of June or in July are less frequently disturbed by these fleas and maggots than those set earlier, and hence, as a rule, not so frequently diseased.

The cabbage worm, which but a few years ago made such a havoc, has been so nearly exterminated by its parasitic enemies that it gives



no occasion for alarm, in this locality at least. A few worms will be found upon the plants when hoeing; but as the season advances they grow scarcer, instead of more plentiful, and do no particular damage.

There is a principle in transplanting cabbage and other succulent plants which is unknown or overlooked by many parties. They seem of the opinion that the sooner a plant is reset after being taken from the seed-bed the more sure it is to live. A moment's thought will show the fallacy of this idea; if it does not, a little practice will.

The plant gets its supply of moisture and sustenance from the soil by means of numerous small mouths at the extremities of the fine root-lets. When the plant is removed from its seed-bed, more or less of these are of a necessity broken, and the evaporation is continually going on from its leaves, more or less rapidly according to the degree of heat and sunlight it is made to stand. If transplanted at once, it follows that the plant must of necessity wilt badly, and, if the weather is hot and the soil dry, may never revive. If, however, on being removed it has its roots "puddled" in muddy water and is then laid in a cool, moist place, in from 12 to 48 hours numerous small white root-lets will be formed, the leaves will stiffen up, and every energy of the plant is set at recovery. In other words, the plant is convalescent, and if given half a chance for its life will commence growing with renewed vigor. For these reasons, plants which have been well packed and transported considerable distance by express will often wilt less on setting, and start to growing sooner than those which are reset at once when taken from the seed-bed.—*Isaac F. Tillinghast, in American Rural Home.*

#### Treatment of Lawns—Fruit as Diet.

*Messrs. Editors American Farmer:*

I differ from our respected friend, Mr. W. D. Brackenridge, in your July number, where he gives some advice about keeping grass in lawns. I have found that if there is a moderate amount of white clover mixed in the lawn you cannot mow too frequently. The general fault on most places is that they do not mow often enough. The grass ought never to be allowed to get so long that the cut grass cannot be allowed to lie where the machine spreads it. If cut at the proper height the clippings will entirely disappear within fifteen hours of sunshine, and will be constantly adding a light mulch to the roots to protect them from the sun. Were we to let the grass here get six or eight inches high, no lawn-mower would then cut it, and it would take my whole force of six men a week to mow it with scythes and rake off the grass; and instead of a lawn, I would have a stubble field as brown as a bat in twenty-four hours after the tall grass was removed. The only way to keep decent lawns here is first to have a good sod of blue grass and white clover, and run the lawn mower over it once a week, wet or dry. In a dry hot spell the grass will brown a little where there is not enough white clover, but the first rain makes it all right in twenty-four hours.

During the drought of July, 1879, I refrained for some time from mowing part of our lawns for fear of injuring the grass, and when the rain came my grass in two days was too tall for the lawn-mower to cut, and I was obliged to go into it with scythes, spending a whole week making hay, and finding at the end that I had stubble instead of lawn. Since that, no drought stops my mowing, and the grass constantly improves. Besides, if I allowed the grass to get six to eight inches high, it would be utterly impracticable for me to cut all my grass with scythes, and keep up our miles of gravel and our acres of flower and kitchen garden, with double the force I have; and I have never yet seen a lawn-mower that would cut grass six to eight inches high. If the grass is never allowed to get even two inches high and all the cut grass is left where the mower scatters it, there need be no fear of serious burning. Those who still use the old "Swift" horse lawn-mower will generally have to rake up their grass, as this machine will not spread the cut grass like the Philadelphia and other American machines. I was surprised a few days ago to find one of the old horse-killing, "Swift" machines still in use on one of the best-kept country seats in Baltimore Co. I did not suppose any one could be persuaded to use one now-a-days, when we have so many better and lighter machines. No lawn in our hot climate can be kept green without a liberal mixture of white clover, and to keep the clover-heads from showing it *must* be kept shaved close. A compact springy turf, thickened by the constant mulch of cut grass, is much better, to my notion, than a stubble field.

The *Farmer* seems to be getting quite a gardeners' club, and I hope some of the gardeners will join and let us keep up our experience meeting. Let all come out of their shells, and make the pages lively with hints and discussion. Your correspondent from St. Mary's College is informed that it is quite common for all geraniums, (Pelargoniums,) with variegated leaves, to sport back to plain green. We always cut these away, as they are more vigorous than the variegated part, and rob it of its growth.

Our friend N. F. F. seems to be getting dyspeptic. I never heard before that any of our standard sorts of apples are indigestible when well ripened; and as to Catawba grapes I will undertake to digest several pounds daily, if furnished to me well ripened. The only trouble hereabouts is that we can hardly ever get a well-ripened bunch of Catawba grown here. The Northern Spy is undoubtedly a finer apple than Baldwin or Spitzenburg; and though I should prefer to eat it, I would not reject a Baldwin for fear of dyspepsia; and I know from experience all the horrors of dyspepsia. If people would eat more ripe fruit and less of highly-seasoned meat dishes, and never go near a drug shop, there would be much less of dyspepsia. Years ago I used medicine enough to keep a druggist in ready cash, but for a number of years past, with a family of six children and three grown people, neither doctor nor druggist have had a five-dollar bill annually from me. We eat all the fruit we can get, and plenty of unbolted flour and Irish oatmeal. If a child gets summer

complaint, fruit is the only remedy we use. Two years ago one of my little girls in her second summer was very much reduced from this cause. We fed her on the expressed juice of ripe pine-apples, and she soon got hearty. This present summer we have fed a teething babe with raspberries and blackberries, simply pressing out the seeds. So I conclude that if N. F. F. will furnish us well-ripened fruit of any kind, we will contract for its consumption and take all risk of dyspepsia. I believe in fruit and plenty of it. W. F. MASSEY.

*Hampton Garden, Balto. Co., Md., July 12, '80.*

### Death of Robert Buist, Sr.

This well-known horticulturist, nurseryman and author died at his residence, in Philadelphia, on the 13th ultimo, in the 76th year of his age. He was widely and favorably known, and through his establishment many of our best gardeners have been introduced into this country.

The *Public Ledger* contains the following notice of his career:

Robert Buist was born in Cupar-Fife, near Edinburgh, Scotland, in the year 1805. At an early age he evinced a fondness for the study of horticulture, beginning his practical lessons in that branch in the Royal Botanical Gardens of Edinburgh, when in his 18th year. He was afterwards foreman of the gardens attached to Elvaston Castle. After several years of experience in Scotland he came to this country, making his home in this city in 1828. In 1830 he established a seed stand on Thirteenth street, below Lombard, the ground extending through to Twelfth street. In 1837 he opened a seed store at No. 84 Chestnut street. Four years later the store was removed to No. 97 Chestnut street (according to the then form of numbering buildings in the city,) and in 1850 to No. 322, now 922 Market street, where it has ever since remained, for the last fifteen years under the direction of Robert Buist, Jr. For nearly all of his life Mr. Buist has either actively engaged or interested himself in every form of horticulture. He wrote several works and essays on flowers and plants; among others, Buist's Rose Manual, Buist's Flower-Garden Directory and Buist's Family Kitchen Garden. He possessed a practical as well as a theoretical knowledge of the plant world, and was thoroughly familiar with every branch of agriculture and horticulture.

His early ventures in the way of establishing an agricultural and seed-growers' warehouse in this city were so eminently successful, that in or about the year 1850, and just at the time of his removal into the Market-street store, Mr. Buist also changed the location of his hot-houses, etc., from Thirteenth street to "Rosedale," situated at Sixty-seventh street and Elmwood avenue, and which has since grown to be one of the largest and finest seed-growing tracts in the country.—Year by year it has been improved and enlarged. In 1850 he erected twenty-one hot-houses, each 22 to 24 feet wide by more than 100 feet in length, and extended his flower-beds and nurse-

ries over 119 acres of ground. At this time, it is said, his annual sales amounted to \$30,000.—Thirty years have now passed since Rosedale was laid off as a nursery of trees, plants and flowers, and it is said that millions of them have been developed from seeds and seedlings to perfect growth and sold to purchasers, and all over the country trees now grown to a stately height were planted from the seed sown at Rosedale. It was the earliest establishment of its kind in all the district south of Philadelphia, and one of the largest known in this part of the State. Two subsequent purchases at different times still further enlarged the area of Rosedale, and now it embraces in all 135 acres of land, nearly every foot of which is in a high state of cultivation, and comprehends every minute branch of plant culture. One of the chief features of the place is a large "Rosery," containing a valuable and one of the most beautiful collections of rare roses in the country. Mr. Buist also owned a seed-farm near Waterford Station, on the Camden and Atlantic Railroad, about twenty miles from Philadelphia.

About 15 years ago Mr. Buist retired from the seed business, leaving its direction to his son, Robert Buist, Jr. He has, however, never relinquished his interest in his profession. He was a member and for many years one of the vice-presidents of the Pennsylvania Horticultural Society, and always contributed some rare flower or plant to the regular exhibitions and monthly displays of that society. He was also a member of the St. Andrew Society, and one of the owners of Mt. Vernon Cemetery. He was a man of strong personal character, of great vigor and will, and always took a great pride in his business.

### Summer Care of Fruit Trees.

One of the most important duties to be performed in the orchard at any season of the year, is that of pruning, and probably there is no operation in the horticultural department so little understood by the great mass of our fruit-growers. Especially is this the case during the summer months, when the enthusiastic cultivator imagines he should be continually pinching back every luxuriant shoot. Age and experience should bring wisdom, but unfortunately this is not always the case in pruning, yet we find many of our older orchardists adopting the theory promulgated some years since by William Saunders, of Washington, D. C., to the effect that very little pruning is necessary, and that the entire system has been fearfully abused. Perhaps it might be laid down as an axiom, that he who prunes the least, consistent with a regular outline, is the better off in the end. Never leave a twig on the tree that is in a wrong position. By cutting it off when young, or rubbing it off as it first puts in an appearance, very little damage is caused; but if it should remain until it becomes a large limb, then its removal will invariably prove hurtful to the tree itself. The use of shellac, dissolved in alcohol, for covering wounds, is an old and valuable remedy, and should always be used when a limb of large size is removed. During the growing season, should any twig outgrow its companions, the end may

be pinched off, and thus the equilibrium of the head be preserved without damage to its health.

The accomplished fruit-grower is always on the alert to induce his trees to make a moderate healthy growth, and at the same time to preserve a perfect outline and an open regular disposition of the branches. The use of mulching material is unquestionably a beneficial operation, especially whilst the trees are young. Rough, coarse, strong manure will keep the surface of the soil moist and cool, and at the same time supply nourishment to the numerous fibrous roots. Frequently, insects will collect under this mulch in large numbers, but if it be constantly stirred this may be obviated.

In regard to insects, we say—wage an unrelenting war upon them. Never put off their destruction for a single day after once finding them out. If it is the tent caterpillar, pull down every vestige of their nest, and tread the worm under foot. Air slaked lime, or even dust from the road, will kill the Pear or Cherry slug. Wherever it has heretofore been neglected, lose no time in searching for the Apple-borer, a white grub that penetrates the trunk just about the surface of the soil; a sharp-pointed knife, aided by a stiff wire, will prove efficacious. No sure remedy can be suggested to prevent the "blight" in the pear, nor the "yellows" in the peach, but the following are not injurious, and are certainly beneficial. Wash the bodies of the trees, as well as the larger branches, with ordinary thin white-wash or strong soap-suds. Top-dress the soil beneath with weak lime, good rich compost, unleached wood-ashes, &c., any refuse decaying vegetable matter in fact, that will furnish food for your trees. A slight dressing of salt, used sparingly, also answers an excellent purpose, and some cultivators recommend ground bones, and others iron filings. A heavy mulching with muck is beneficial to all young trees.—*Josiah Hoopes, in American Garden.*

#### A New Class of Roses.

The year 1879 has given us, in the roses raised by Mr. Bennett, a new class which is likely to create greater interest than any roses, perhaps, which have ever been brought before the public. I do not mean that they will supplant the classes already known, or that will prove of greater value than those we have. This may come to pass, in a measure at least; but as these hybrid teas of Mr. Bennett have only been partially tested, and that in England only, their definite position and value are yet unproved. They are, however, all pedigree roses, and any one in examining their parentage must conclude that very desirable varieties are likely to be had from such crosses.

In 1867 there were sent out by Mons. J. B. Guillot, of Lyons, France, a rose which is the sweetest, and probably the most popular, of any rose grown. This sort came up in a mixed bed of seedlings, sown from pods of various tea roses. It was soon remarked that this variety differed greatly from the teas in the same bed, though evidently having a strong infusion of tea blood; it was named *La France*, classed among the remontant roses, and soon proved itself worthy

of a national name. Though a chance seedling, its parentage unknown, it is the head of that class of roses now known as hybrid teas.

Mr. Bennett has adopted the course of manual fecundation with roses, fertilizing different tea roses by several varieties of the hybrid perpetual; the parentage of all his seedlings is therefore known, and adds greatly to the interest of the result.

The parent plants of the roses sent out by him in 1879 were the teas *Alba Rosea*, President, and *Mme. de Joseph*; these were fertilized by the remontants *Countess of Oxford*, *Louise Van Houtte*, *Duchess of Vallambrosa*, *Marquise de Castellane*, *Lord Macaulay*, *Emilie Hansburg*, *Mme. Victor Verdier*, *Countess of Serenye*, and the moss *Supert et Notting*.—*H. B. Ellwanger.*

#### How to Grow an Osage Orange Hedge.

In Messrs. Wm. Corse & Sons' new catalogue for the fall of 1880, we find the following instructions:

Would space permit, we would give instructions for growing all kinds of hedges, but as it will not, and as *Osage* hedges are now being used for both ornamental and farm fences more than all others combined, we give the following hints, by which a good hedge can be produced at small cost:

Prepare the strip of ground where the hedge is desired in the manner that you would for corn, and as wide as circumstances will admit up to six feet—wider than this is no advantage. Set the plants six inches apart on a straight line, which can readily be done by drawing a cord or rope down the centre of the strip, marked with pieces of red yarn or chalk at the proper distances. Six inches we have found to be the best distance and is very convenient in computing the number of plants to buy, requiring as it does just two to the foot. The plants may be set with success any time after they lose their leaves in the fall, until in almost full leaf the following spring, as they are very tenacious of life and easy to make live. We do not, however, recommend fall planting north of Baltimore, as the plants are occasionally winter-killed or frozen out before spring; the best time to set is just as the plants commence to start. The quickest way to plant is to thrust a spade into the ground to the full length of the blade, at the proper place, then forcing it to one side push the plant in the opening made to an inch or so below where it stood in the nursery—i. e., where the yellow root ceases. On withdrawing the spade, press the foot each side of the plant to firm the ground, unless it be wet, when omit this last, lest it cause the ground to bake.

One-year plants should always be cut back to two inches, and two-year plants to four inches of the ground line, either before or as soon as planted. A good covering of mulch as soon as planted is a great benefit, although not necessary, as it keeps down weeds and prevents the ground from drying. The plants need no further care the first year beyond keeping the ground mellow and free from weeds. The spring after setting, with a pair of large shears, made for the purpose,

and which can be had at any store keeping agricultural implements, cut back to within six inches of the previous cut, then in the latter part of June or early in July cut again within eight inches of the last cut, and so continue, trimming in winter or spring, before the buds start, and again in midsummer, leaving eight inches to the height of the hedge each cutting, or sixteen inches a year, until the desired height is reached. After this the hedge should be pruned as near the old cuts as possible. In all trimmings it should be borne in mind to prune the branches near the top the closest, giving the hedge a pyramidal form, which must be done to admit the sun to the lower branches, as otherwise they will die out and the hedge becomes open at the bottom and unsightly. If the hedge gets too high, it can be cut back to any desired height before the buds start in the spring, when it will sprout out as vigorously as ever.

Another plan is to let the hedge grow without trimming until some six feet high, and then plash it. This, however, does not make so pretty or good a hedge, requires equally as much labor as the other, and obtained no quicker—hence we prefer the mode described.

### The Grange.

#### Evenings at the Grange.—No. 3.

CERES CONTINUES HER LITTLE SPEECH.

#### To Make our Meetings Profitable.

It is not necessary here to go back to the first grange principle and expiate on the advantages of co-operation in business affairs. Apart from grange organization, such advantages are so self-evident it is but wasting time to refer to them. One might as well air his eloquence over the relative superiority of ten fingers to one, or the benefit of our two feet and two hands as compared to the single-hand and single-foot condition.

When we stand on our feet and work with our hands we are sufficiently convinced, and the grange finds by experiment that its principle of union and co-operation is one of double advantage.

How this general principle of co-operation succeeds in each subordinate grange will depend, of course, upon the amount of good sense and good business ability with which its joint labor or joint capital is set to work. Here, as in all other cases of action, our power to work the little separate and disjointed "sums" of life will always be in proportion to our exact knowledge of the governing "rule" and our ability to make the good, hard-sense practical application after we have mastered the distinct questions.

So each grange decides for itself as to the particular way or ways in which this grand principle of co-operation is to meet its special need and work for its special benefit. Many of us to-day can point to places where "the grange store," with its moderate prices and honest percentages, stands as the true sign-post to show where and how the grange has graded the road that led through monetary difficulties, up and

on to the solid plane of material advancement in the life of that community. Dispensing with the double-fisted middleman that grasps both ways from producers and consumers, it has afforded a safe investment to those who had but little money to invest, and its low prices resulting from such arrangement has been the greatest possible accommodation to those who have but small amounts of money to spend.

However, all these business discussions and business arrangements belong by right to the brothers of the order. As sisters, we are only required to inform ourselves so far as to be able to cast an intelligent vote when called upon for a voice, and thus be able to prove ourselves not unworthy of the privilege of voters.

Yes, there is one other thing woman can do here. She can by her subtle and unresisted influence promote harmony and fair impartial intercourse when anything so trying to man's equanimity as the personal interest of business is under consideration, so that such a disgrace as a stormy meeting could never happen while a grange hall was graced by a sister's presence.

Otherwise, our aid just here is not required, the brothers being quite "sufficient for these things." Indeed, I am going to add, I fear that "these things" are oftentimes quite sufficient for the brothers. Where is the hall and when the evening at the grange that the sisters have not smiled innocently to themselves to see how the dollar and cent interest asserted itself unconsciously as they beheld the attention of many of the good brothers that had flagged almost to drowsiness while "suggestions for the good of the order" went on, suddenly roused up wide awake and watching when the proceeds of the evening were announced?

By the way, while we are on the monetary profits of the grange, I would like to make one suggestion. It is that the good brothers who bear the purse and business ability would try to manage matters in such sort as to get the entrance fee and all other grange fees reduced to a MINIMUM. The rates are too high for plain farmers, and the present tendency is to make *too fat a corporation somewhere*.

Another matter also that ought to be attended to, and that would bring much satisfaction, would be to have each subordinate grange kept better informed than at present of the distribution made of the paid-in funds.

Each subordinate grange, the State grange and the general grange cannot be too specific and particular in this matter. Everybody who pays even a mite of money into a general treasury wants to know what becomes of that money. He has a right to know, and the receipts should be so accurately and minutely made out and read out, that everybody in a grange can see exactly how every cent of the funds is applied.

This would be decidedly profitable to the grange, as it would gratify individual grangers and put a stop to that insinuation,—often heard so vague and so annoying,—"I want to know what becomes of all the money! Somebody has made a big thing of it, that's certain!"

But apart from all this, there are minor things that help the profits of a grange more than we



can count in dollars and cents. Foremost among these, is some intellectual treat for every grange meeting. Little pleasant addresses or debates or readings,—always *short and always on strictly grange subjects*. Not long-winded articles, read in a hum-drum tone, nor set speeches of formal cut. If the lecturer is a good reader, it is always in his power either to treat the company to some pleasant little article worth hearing, or of requesting some more accomplished brother or sister to do the work for him.

Then, also, nothing is more agreeable or improving than little off-hand conversational debates upon any subject that a brother or sister may desire information.

We would have it perfectly understood here that we want all this exercise to be strictly for the instruction, profit and pleasure of grangers.

We want no legal cross-grained discussions nor concussions, wherein the speaker squares himself to give his brother the knock-down argument, and whose whole expression seems to be: "Just listen now, and hear how well I can speak!"

We commend all such speakers to the courthouse.

For our purpose we only want a simple, honest investigation of what belongs to grange life, the farmer's farm, the housekeeper's house, the out-doors and in-doors, the field, the garden, the orchard, the dairy, the henney, the kitchen, the pantry, the food, the family, the fireside.

If any brother has succeeded in raising extra-fine cattle, cotton, or corn, or cabbages, we would like him, when requested, to give the grange the benefit of his method in a good plain farmer-like manner.

If another brother knows of what he believes to be a better way, let him rise in time, and in courteous, unpretending, simple fashion, let them set forth the respective claims to favor of the two methods. Or if any sister has famous success in raising small fruits or poultry, or in making butter or anything of general interest, let her tell the brothers and sisters, in a modest and good-sensed way, just how she did it. Each season furnishes its own subjects.

You may be thinking that we all know now many more theories about these things than we practice. That every agricultural newspaper and magazine is full of information on all the different ways of detail farming and gardening and dairying, &c., if we take the trouble to consult them. So they are. But the information gathered in that way is not half so reliable or so impressive as that we get from a brother or sister as the result of his or her experience. And as action is as far before words as fruit is ahead of leaves, let each member, when it is possible, illustrate his theory by his practice.

For instance: Brother W. knows how to raise the finest sort of a rawberries, or Sister L. the most superior raspberries. When the ripening-time comes, let Brother W. and Sister L. bring to the hall a basket of choice fruit. And while the beautiful truth is thus pictured and framed before the eyes of all the circle, let the raisers tell us what variety of fruit it is, where gotten and how raised, and all about it. And

when the bedding-time comes, let each generously give to any brother or sister who may want them, seed-plants, on condition that every attention will be given to bring the fruits to still greater perfection. Or better still, let an exchange be made for something that Brother W. or Sister L. needs, and of which some member has a surplus.

In the same way, samples of grain and vegetables should be brought, and flowers and preserves and pickles, so that not a meeting need be held the whole year through, in view of the vast and varied field we have to gather from, but some pleasant variety of the sort could relieve the routine of ritual, or, if preferred, there could be evenings specially set for this comparative display of grange products. Only let the set times be for the products, not for the display. The tendency is so human to do things *just for show*, that I rather think the simplest and most unpretentious way the things can be brought together the better. So that the pleasure will come oftener and the benefit be more enduring. The encouragement, too, will be greater to those who have but little to bring. The smallest efforts in this line should be encouraged. I saw a sister one evening look abashed and depressed because the very superb specimen of cauliflower she had taken the trouble to bring to the hall was so little observed. This is bad policy and worse manners. I noticed she never brought anything more, and very soon left off coming herself. Great commendation should be given, or at least true appreciation shown, to every such endeavor for the good of the order, be it ever so small or ever so homely. For the practice is a most healthful one, since nothing tends in a greater degree to spread through the agricultural community that modest and generous competition that is so vigorous a help to the life and growth of the grange.

Here Ceres observed that, although she had not half exhausted the subject, her ten minutes had expired and she must stop. She had only thrown out some hints on which she wanted to hear the pros and cons of the grange at some future meetings.

VIRGINIA CLARKE.

### The New Ritual and Esoteric Instruction.

Every change is not for the best, as every farmer knows sometimes by very sad experience. They do not fulfil expectations, just as the promise of the crops in spring are not realized at harvest, yet there are many changes which are beneficial and yield most abundantly.

To those who have read Bro. Kelley's History of the Order and then perused the Manual, it will not be surprising that it should have contained some incongruities both of language, of sentiment, and of arrangement. It was particularly deficient in all that related to the Esoteric Work of the Order.

To remedy partially this latter defect, various members of the Order have from time to time placed in its hands different works, all worthy of attention and of study. Thus we have Brayton's Grange Monitor; Hudson's Patron's Handbook; Smedley's Patron's Moni-

tor and his *Manual of Grange Jurisprudence and coöperation*; Grosh's *Mentor in the Grange* and Cramer's *Patron's Pocket Companion*.

Yet none of these could remedy the known defects of the Ritual. The National Grange, however, as long ago as 1873 appointed a committee "To report a revised and printed form of the Manual of the Order to the next meeting of the National Grange."

At the eighth or Charleston Session, the committee, after a labor of two years, and "consultation with the different members of the National Grange" reported the New Ritual, and from their report we extract the following paragraphs illustrative of what they did: "Immediately thereafter the committee commenced its labor and during the following summer had many sessions, at which every sentence of the Manual was carefully considered; and every change suggested, however small, was the result of mature deliberation, your committee sought to introduce as few changes as possible, and to decrease rather than increase the length of the degrees. At the same time we have corrected errors of fact, of punctuation, of grammar, of quotations, and of style; have omitted what was inappropriate or redundant; supplied connections of dis severed portions; brought out more clearly prominent ideas, and have given more distinct meanings to Symbols and Emblems."

"The importance of having a well-digested and harmonious Ritual will not be questioned. Through it all our philosophical, moral and social teachings should be represented in fitting forms of speech and action; so that it will become increasingly attractive as it becomes familiar to the members of the Order."

"Its ground plan may be likened to a farm in various stages of improvement. In early spring, laborers are received to prepare the ground for seeding, and maids are welcomed to the mansion and the dairy. As summer approaches, these laborers become cultivators, and the maids are promoted to care for the flocks; when the crops ripen, cultivators are advanced to be harvesters, and the shepherdess becomes a gleaner. And when the year is crowned with goodness, and the season for social intercourse and mental improvement is at hand, harvesters and gleaners are exalted to the dignity of husbandmen and matrons, to oversee farm and household, and to dispense, as well as to enjoy, the blessings of Providence."

The new Ritual thus carefully prepared and thoughtfully considered now sees the light. Need it be said that from the opening to the closing page it bears out every statement of the committee who prepared it, and is most worthy of the thoughtful and close attention and the profound study of the officers and members of the Order, especially the former, upon whose intelligent rendering of it in its simplicity and beauty depends whether its symbolical teachings fall upon the ear of the neophyte as profound truths leading almost unconsciously to higher aspirations and broader reaches of thought, or only as a jargon of unmeaning words.

Properly rendered each repetition must bring out new beauties, and unfold a deeper depth of meaning. It must give a higher idea of nature's

grandeur and sublimity, and deepen our "love for the country," where these scenes are ever spread out before us in one ever-changing but constantly repeated view. And from these suggestions must come new thoughts about Him who made it all, and a deeper reverence for his teachings as laid before us in nature's book.

It seems to us that no progressive Grange, whose officers and members are imbued with the proper spirit, and who wish to go up higher; to increase their mental stores, and enlarge their scope of vision, will do without this new edition. Just as the fifth edition surpassed the fourth, even so, but at an immeasurable distance beyond, does the sixth edition surpass the fifth.

In another respect it becomes absolutely essential. In an important particular it changes the Esoteric work of the Order so that no live Grange can do without it.

Its use in the subordinate Granges is rendered still more necessary by the action of the National Grange at its last session, which made this edition "the authoritative and official manual of the Order." The force and meaning of this action will be better understood by reference to the Digest, p. 125, which says "the Ritual adopted by the National Grange shall be used in all subordinate Granges."

Reference has been made to a change made in the Esoteric or unwritten work of the Order. Those who have visited many subordinate granges, or even the State Grange, must have been struck with the want of uniformity in even the simplest and most commonly-used portion of the unwritten work. A part of this want of uniformity has been supplied by this edition of the Manual. But to those who wish to be thoroughly posted in it, which, through the haste or unskillfulness of the organizing officer, they were not, will find their wants admirably supplied by brother and past lecturer Thompson's *Hand-book of "Esoteric Instruction."* He is, it will be recollected, the author of the unwritten work. In addition to the unwritten work, the book contains a very full and complete explanation of much of it which has caused not a few to protest against it as useless, because unmeaning. With this before them it is exceedingly probable that they will come to regard the lessons of the Ritual and of the unwritten work as a "rounded and complete" whole, even as winter fifty terminates spring, and old age youth. Both teach us that the all-seeing eye beholds all our acts, and that he lives best who in them recognizes the Fatherhood of God and the Brotherhood of Man. A.

Wicomico Co., Md., July 12th.

MONTGOMERY CO. GRANGE, No. 7.—The regular quarterly meeting was held at Darnestown, July 15th. The executive committee made a report on the comparative value of the different kinds of lime, and resolutions were adopted directing the executive committee to obtain samples and have analysis made of the various lime-rocks found in this county, and also of gas-house and oyster-shell lime; and requesting farmers to exact an analysis of the dealers before buying. A motion, looking to



the appointment of a board of arbitration to settle differences that might arise among Patrons, was discussed at some length and referred to next meeting. The following was adopted:

"WHEREAS, This grange has learned with sincere sorrow of the sudden and afflicting bereavement of Olney Grange, No. 7, in the death of our late brother, Dr. J. Wilson Magruder.

"Therefore, Resolved, That we hereby tender our heartfelt sympathy to our sister grange in her loss by death of this active and gifted member, whose talents were employed in promoting the principles and objects of our beloved order throughout the county."

In the afternoon a public meeting was held and addressed by W. M. Isaac Young.

### In Memoriam.

*Messrs. Editors American Farmer:*

By order of All Hallows Grange, No. 14, I send the enclosed resolutions, relative to the death of its Chaplain, the Rev. James Bonnar, also the Rector of All Hallows Parish, and beg insertion in your next issue.

Yours fraternally, EDWIN A. DITTY,

*Secretary All Hallows Grange.*

WHEREAS, The Hand of Providence has removed from our midst our beloved brother, Chaplain and friend, the Rev. James Bonnar,

Resolved, That the secretary make proper record of our loss in the minutes of the grange.

Resolved, That the fragrant memories of those whose lives are spent in good works are a rich inheritance to us who are left, and should serve as incentives to emulate their examples in well-doing.

Resolved, That the lustre of earthly honors and dignities becomes dim and as nothing in comparison with the glorious rewards of those who, in missions of love and philanthropy, are faithful to the end.

Resolved, That our deepest, our most sincere sympathy, is due to the family, on account of their irreparable loss; and that we regard it as a privilege as well as a duty to render them every assistance in our power in their great trouble.

Resolved, That a copy of these resolutions be presented to the family, by our Worthy Master.

July 3d, 1880.

At a meeting of Olney Grange, held July 21, 1880, to offer tribute to the memory of Dr. John Wilson Magruder, the following preamble and resolutions were unanimously adopted:

WHEREAS, Our highly-esteemed brother, Dr. J. Wilson Magruder, has been removed from our very midst by the operation of Divine Law, and whereas his brothers and sisters of Olney Grange are desirous of paying the respectful tribute due to his memory, and to the mutual affection which has always existed between them, therefore

Resolved, That in the death of brother J. Wilson Magruder, Olney Grange has experienced a loss beyond the "power of time to heal."

Resolved, 2d, That his bereaved family have our heartfelt sympathy in this deep affliction.

Resolved, 3d, That a copy of the proceedings of the meeting be sent to the family of the deceased.

A number of addresses were read commemorative of the deceased brother, from one of which this extract is taken:

"It has been said: Death loves a shining mark. For Olney Grange, his dread hand was long withheld; but is has now struck a terrible blow. The loss, deeply felt over a wide community, will be repeated for us at every meeting; and many meetings will be required to experience its full extent. There were so many ways in which our brother made his presence felt amongst us. The fact of his regular attendance was of itself a great advantage to an assembly such as ours. We felt the confidence that, whichever other member might be missing, Dr. Wilson was almost sure to be there. And even when neither reading, recitation nor song came from his lips, still it afforded a certain pleasure to look at him. For I believed to see there something more and better than handsome features; the expression which comes from a mind and soul of the highest order; one that was capable of a culture and expression beyond the concerns of every-day life. The mark of capacities, perhaps unused, was there. Dr. Wilson seemed to me a poet, though he may never have written any verses; and a thinker, who had faculty to have penetrated the deep springs of life and action. He was candid, outspoken, independent—there was so much earnestness and truth united to the high qualities which attract regard and assure influence, that we are justified in believing a career was before him that would fulfill the expectations of his admiring friends. Whatever he undertook, he threw his whole heart into and did thoroughly. Though possessed of an extraordinary natural talent for reading as well as singing,—with a voice whose deep, rich, sweet tones will linger in this hall for ever; still it was his fixed custom to give each piece, whether of music, verse or plain prose, the attentive study which he knew was required in order to bring out its best meaning and beauty.

"Perhaps it is not going too far to claim that his connection with our Order formed an important part of Brother J. W. Magruder's life. His devotion to it was remarkable. He seemed to throw his mind and heart into the grange, and work for it with a fidelity and zeal surpassed by none. Not only was this shown in the literary and musical entertainments, where his natural gifts made him acknowledged king; but in the grave, practical business concerns constantly demanding attention, he was always ready to do his part.

"While we continue to visit this Hall, and take our accustomed places here, the recollection of that sad night and all it has deprived us of, will ever recall his memory with emotions only too strong, too deep and melancholy. The best and most grateful tribute that we can pay to his memory will be to let it serve as a new inducement to us to do our duty in promoting the welfare of the grange he loved so well."

### Work for the Month—August.

The great pressure upon the farmer is somewhat relaxed, and now, if ever, he may give himself an occasional holiday and some relaxation from the demands of the farm. And it pays him to do it occasionally. Preparation for future crops should be thorough, and especially for the wheat.

**Wheat Ground.**—Early plowing is conceded on every side to be an advantage, since, if well turned now, a very shallow working at seeding-time will suffice, and the ground will by that time have attained that compact state most suited for the seed-bed for wheat.

**Sowing Rye.**—Farmers whose custom it is to pasture their rye fields in fall and spring prefer to sow the latter part of this month, there being no risk to run of its falling, your sheep and calves keeping it from becoming too rank. The land ought to be deeply plowed and well pulverized. Without some manure, unless your land should be in fine condition, you cannot expect a full crop, so that it will be well to give a dressing of fine bone-dust or phosphate. No farmer who has had the advantage of the early green food which rye gives in the spring will be likely to forego sowing a patch. To those who have not done so heretofore, we commend trying a small lot. For cutting green it ought to be sown thickly,—say two bushels to the acre.

**Setting Meadows.**—Where timothy is to be sown by itself and not with grain, as is the custom, this month is the best to sow it in. The land ought to be perfectly prepared,—a soil in which a good proportion of clay exists being best for this grass. A stiff clay, however, must be carefully prepared by plow, harrow and roller. Sub-soiling in such lands is also an advantage. Timothy is an exhausting crop, and to secure good returns for your trouble and expense of preparation, the ground should not only be in good order, but well stored with food for the crop in available condition. Barn-yard and stable manure, super-phosphate or bone may be used with profit. A peck of seed to the acre is generally used. A good plan, where timothy is to be sowed, is to sow flat turnips with it,—a quarter pound of turnip seed being enough to the acre. If the timothy is to be marketed, it is best to sow it alone; if used at home, the addition of half a bushel of red-top to the acre is recommended.

**Permanent Pastures.**—Where these are running out, moss-bound, or poor, a good deep harrowing and rolling, with the application either of fine manure or some artificial fertilizer, and fresh seed sown, will be a renovation.

An excellent renovating mixture of seeds is composed of 8 lbs. timothy,  $\frac{1}{2}$  bushel Kentucky blue grass, and  $\frac{1}{2}$  bushel orchard grass, and if to this 1 quart sweet-scented vernal grass is added it will be relished by stock. Mix the seed thoroughly, divide and sow the portions in different directions, and harrow in with a light harrow or brush, and roll. In the spring sow clover and roll again.

**Buckwheat,** if sown at once, will have a chance to mature before frost. For turning

under as a green manure it may be sown at any time before the end of the month.

**Tobacco.**—The ground must be kept well stirred around the young plants. In laying by, the furrows must be opened so that the water can run off with ease. The planter must now look out for his worst enemy, the "*Hornblower*." We have been experimenting, off and on, for the last twenty years, for something with which to poison it. We have tried cobalt, arsenic and strychnine, without success. It may be, however, that we made the liquid too strong. We shall now try Paris green, ipecac and calomel,—about twenty grains to an ounce vial of honey and water, one drop to a flower. We should be pleased if some of our readers would experiment also. We want a poison that can be disguised with liquid sweets. Instinct teaches the fly not to touch anything foreign to its tastes. The fly is evidently short-lived—possibly not over five days—and if we could give it something to cause it to suspend work (make it sick) for that length of time, the planters' trouble would be over in that direction; only, however, to rise up in a worse form.

**Turnips.**—The flat sorts may be sown from now on to the 25th. A good application of super-phosphate has the effect of making them start off quickly and increasing the crop. A pound of seed is sufficient for an acre, and it is generally sown broadcast. Ruta-bagas may, on good ground, finely prepared, make a crop if sown at once and the season is favorable.

### The Orchard and Fruit Garden.

The steam and telegraph spirit which characterizes the American people seems to have enticed nature itself to push along at a rate more rapid than usual. Clad in her gaudy and bewitching spring attire from two to three weeks in advance of her custom in previous years, she makes a show of consistency by putting aside her blossom-crowned robes for the more substantial hues of ripening grain and blushing fruit, with the same precocity which marked her haste in the start. And with lavish hand she bestows upon her admirers fruits rich in ripened fragrance, two weeks earlier at least than she accomplished the same work last year.

As the governing feature in the orchard at this stage of the season is to manage the crop to the best pecuniary advantage, it must be remembered that appearances have a controlling influence on the price of fruit, whether in crates or baskets, beyond what may be accounted just; as, for instance, in Philadelphia market the present season, when carelessly-gathered apples were bringing but \$1.50 to \$2 per barrel, *picked* Red Astrachans commanded \$1.50 to \$2 per crate. And a similar preference for nice peaches were manifest at the same time. In this fact lies a hint that, however plain, will only benefit the energetic and thrifty fruit-growers. As it does not seem to make any difference how high the price for nice fruit, or how low for inferior, a goodly number of producers stick with inflexible tena-

city to the latter, and prefer to cover ten acres of their land with fruit-trees, stint, starve and neglect them, bestowing labor enough to make them feel sad when their fruit sells for the lowest price, but not ready to agree that one-fourth the acreage in trees well and properly managed would turn the tide of profit in their favor.

We meet to-day Mr. A., and ask him how his fruit is paying him, and we have the reply that he got good prices for all his shipments. Next we meet Mr. B., and, to the same question asked Mr. A., we are answered "that fruit-growing don't pay;" he worked hard, and at the end of the season had his labor for his pains. But when another season comes around we find Mr. B. pursuing the old policy; and thus it goes with many year after year. Land, before setting in orchard, should be of such fertility as to produce (in fair seasons) forty to fifty bushels of corn per acre; and this condition should not only be maintained, but improved rather than diminished. Starting on this basis, and planting no more of the *best* varieties of fruit than can be thoroughly cultivated afterwards, will insure to the operator a good and handsome profit on the labor and capital thus expended; yet, after all the above conditions are complied with, let it not be presumed that the inexperienced are likely to make it a complete success from the start,—for, verily, there are many things to learn in growing and handling fruit with profit. This fact applies to small fruits as well as to orchards. Suggestions as to management of the orchard the present month are not needed here, as those in bearing have the attention of their owners in handling and shipping the crops, while the newly planted orchards that were planted in corn, or some other crop requiring clean and good tillage, will require no further attention than was suggested in former numbers.

In the *Fruit Garden*, the Strawberry beds should be kept clear of grass and weeds by frequent stirring of the soil; and where it is desired to propagate a larger stock of plants of any variety, the runners must be undisturbed, and by last of the month, if the season does not prove too dry, there will be plants sufficiently rooted to remove to other beds when the weather will permit. Raspberries and Blackberries, where permitted to grow uninterruptedly, have made longer canes than is judicious to leave; and where not already attended to, they should be headed back, say one-third of the growth, so as to make them less liable to injury by hard winds, and to cause side branches to be thrown out, giving more wood for the production of fruit next season.

### An Inquiry.

*Messrs. Editors American Farmer :*

In the interesting account of proceedings of Deer Creek Farmers' Club, in May No. of your excellent paper, it is stated "Mr. Lee wintered all his stock from the corn and fodder on 13 acres." I have asked several persons to write you, and find out, if possible, how the thing was done; but as I do not hear, and in this section we now *know the fact* that our hay crop is very light, will you, as good friends to the farmer,

please get the information, and let us have it in time to make the most of what *now* looks favorable for a good crop of corn.

*Montgomery County, Md.*

E. L.

[We hope Mr. Lee will give the information desired.—*Eds.*]

### Home Department.

#### "Bless the Servants."

Everybody knows that there are "blessings" and "blessings;" they may be of the nature of true benedictions, or just the reverse, according to the spirit of the one who utters them, or the occasion which calls them forth. Just at this time we housewives are not supposed to be in the most gracious of moods toward the class upon whom our blessings fall; and the inference therefore is, that we use the term not in its best sense, but rather to emphasize our indignation when we find ourselves discomfited by their taking the bit under their own control and marching off to camp-meeting. However amenable to our wishes they may be all the rest of the year, they acknowledge no authority that interferes with this indulgence. No other interest of ours, or even their own, is of any consequence to them as compared with the annual jubilee. Other people who do not understand the habits or the privileges of the servants in this locality, could hardly comprehend the extent of this grievance from a housewifely point of view; nor the utter disregard of consequences on the part of servants where the spirit of camp-meetings is abroad. Wherever this spirit makes for itself a local habitation, there does it draw from every direction, men, women and children of every size and age; and as there are few beyond the age of infancy whose services are not in requisition by some of us, it may be inferred that the blessings which follow them, are bountiful, if not benign. Having experienced every phase of discomfort imaginable from this cause, whether from a house-full of company, or sickness, or infirmity, I have nevertheless, at middle age, arrived at the conclusion that the occasion being inevitable, we are ourselves mostly to blame for not anticipating it, and preparing ourselves in such a way as to avoid being so terribly put out.

We may by a little self-discipline bring ourselves into so complacent a frame of mind that we will recognize this momentous occasion as one requiring special preparation, just as we would if some members of our family were going to the springs or sea-side; and in so doing propitiate the offender to a degree that will cause him or her to so order their times of going as to give us the least possible annoyance. We could, for instance, so economize in our wearing apparel as greatly to lessen the amount of washing and ironing; we can also have ham or other meats cooked at times when we can command their services, and eat them cold. If company happens to be with us, which we should by forethought, if possible, guard against, we certainly might be excused for asking them to share in such privation as we ourselves are willing, for the time being, to submit to.

Upon the whole, I rather suspect myself of having gone over to the other side with my sympathies. It is the one great occasion upon which the colored people set their hearts from the conclusion of the one season till the opening of the following one; every other holiday sinks into insignificance by comparison; in fact they have very few holidays in these times, and I don't know but that (if we take it right) we are the gainers by their gathering them all into one continuous season. When it is over with, we may calculate upon a good long respite from such interruptions to our domestic rule, and moreover there is about them such a satisfied, contented air, (that is, if they have had full benefit of the occasion,) that one finds a comfort in their services which goes far to cover whatever annoyance we may have suffered. The whole effect, however, for the time and afterwards, depends so much upon how we take it, that I have thought it worth while to offer to less experienced housekeepers a few of my more matured observations.

In the first place young housekeepers, who are worthy of the name, pride themselves greatly upon the working of the domestic machinery; to them interruptions of any kind are apt to assume undue importance. They are often uncompromising to an unjust degree, not only with their servants, but also with their husbands or anybody else belonging to their household.—Fortunately in some cases, unfortunately in others, much of this spirit yields in time to their inability, from the various circumstances of motherhood, to maintain this high-handed regime. The fortunate cases are, when the young mother being forced to take time for reflection, profits by it, and having, perhaps, through her own weakness, discovered some points of humanity in common with those who serve her, and possibly learned through her husband's tenderness to recognize the fact that he may possess many virtues and yet lack that of order, and particularly about the house. It is from such beginnings that our best wives, mothers and housewives are produced.

The unfortunates are those whom involuntary withdrawal from the scene of action makes more sharp to see short-comings and more eager to do battle. God help the husbands, children and servants of that class, for they inevitably terminate in becoming probably immaculate housekeepers, but certainly "shrews." Also among the unfortunates are those who have grown weary of well-doing, who have exhausted alike their theories and their galvanized energies, and therefore with the first excuse for delicate health and the novelty of the demands of babyhood throw all the responsibility and care of the house they so ferociously attempted to govern at first, upon the servants and husband. Of all grades of housekeepers these are the most unjust toward their servants, their requirements as capricious, as well as their manner of dealing with them in other respects; most servants would rather serve the most exacting mistress who knows what she wants, and when she has it, than the careless one who does not know what she requires, nor when she is well served. Of these are they who will sit forlorn, perhaps upon the kitchen steps, and view that deserted

apartment in utter woe and bless departed virgin. As for myself, I have, during the extreme heat through which we have passed, been most profoundly thankful that I had not to cook my own dinners, and if those who stood between me and that necessity have been disposed to bargain for the privilege I should have made it upon easy terms; probably have said, "yes, if you will bear patiently the heat and burden of these days, you may have all the satisfaction you can get from camp meetings."

Remembering these things, I fortify myself as best I can, and then bid them go in peace, with a *bone fide* benediction.

CERES.

### August Thoughts.

When a bridge spanning some great chasm or distance is finished, we read of the tests to which it is subjected, the trial made of its strength and ability to withstand weight and pressure. It generally, in these days, bears such strain at the first, only to give way under later storm or shock. A skillful engineer, we are told, estimates the strength and resisting power of a fortress from its weakest point. And the plan is a good one to apply to the physical, mental and moral training of children. It is good, too, to take into calculation the enormous pressure of temptation, the severe continued strains and sudden shocks to which each child will be likely to meet with in body and soul. What would the world's great active benefactors have accomplished, generally speaking, if diseased, feeble and crippled? Hot weather is undeniably a strain on a child's nervous system, yet tens of thousands of little ones are doomed to bear the impurity of city atmosphere, with its tainted breath and foul poisons, through the summer's length; and many who are even in the country suffer much from want of wise management in hot days and nights.

A daily bath is indispensable to a child's health and comfort,—not only to little children, but those of larger growth. In the afternoon, also, children should lie down, and, if possible, sleep. I have a very wise aunt, who has most successfully brought up a large family of children. Living in one of the coolest mountain places, she was always in the habit of saying to the child that was cross and irritable: "Go and lie down half an hour." Most persons would have punished the little culprit, but she wisely took no notice of the fretfulness and ill temper, but insisted on the bodily rest. Sleep was not mentioned, but they often succumbed to it before the half or whole hour was over. If you live in the city, make it a rule, twice weekly if possible, to go out of it, or spend a day in our beautiful park. When you come home at night you will be astonished at the foul air you have been breathing in your city dwelling. My little boy had been teasing me to take him to Druid Hill for some days, and lately we all set out for its green and shade. Grandma went with us, having her cushion shawl, the last copy of the *New York Express*, with Talmage's sermon, and one of her favorite volumes of Charles Spurgeon's discourses, twelve of which have been republished on this



side of the water by Sheldon, from which, from time to time, she read us striking thoughts from that wonderful preche, with his vast knowledge of human nature and the scriptures. How happy she was in Charley's enjoyment, and how that young man revelled in the sight of bears, monkeys and birds! How cool and pure the water from St. Edmond's well, and what an extended view of sky and sunset, with background of woods and velvet sward!

Pleasures like these often leave an indelible impression on the mind of a child, refining the taste and brightening months that would be dull but for such recreation. As a nation, we work too hard, and fast and rest too little and seldom.

J. B. MOORE BRISTOL.

### For Making Grape Wine.

In answer to a request in the *A. F.* for July: "Will those who have good receipts for domestic wines please give them to the Home Department?" I send the following. I have never made wines by it, for the recipe has just been given us. But "the proof of the pudding is in the eating," and wine in the drinking. We are now just trying some of the last,—four years old,—that was made by this direction, and find it the most delicious juice of the grape we have ever tasted:

Let the grapes gathered be rather ripe, with all decayed and imperfect ones removed. Mash, strain and measure. To each gallon of the juice add one pound of white sugar. Let stand for two or three days; skim, strain and measure as before, and to each gallon add one pound of sugar. Let stand again for two or three days, and again skim, strain, measure, and add the pound of sugar to each gallon. Cork and put away. Do not add a drop of water to the juice if you want good rich wine.

Clarke Co., Va.

S. W.

### Dairying as a Specialty.

The *American Dairyman* argues with good ability that dairying is a special business and needs special training in order to carry it on with success. It says: "A man cannot be a wood-chopper or a clerk to-day, and a dairyman to-morrow. There are years of study and preparatory work essential to success, and a knowledge of the science as well as the art is needed. It is the experienced dairymen only who realizes how much there is to be learned before the art is acquired and facility in its practice is gained. It is he who gains the reputation for choice products, whose stock is well selected, well managed and made profitable." We believe that this fact is becoming more and more appreciated. We know of several young men from the city who have gone West recently and put themselves under special instructions to learn the dairy business, preparatory to entering upon it themselves. They are parties who can command the necessary capital when necessary, but their parents propose to have them go through a regular course of training before investing a dollar in the business.

When their education is sufficiently advanced, the funds will be forthcoming to buy a dairy farm in the fertile lands of Iowa, stock it with cattle and put up a first-class creamery with all the modern appliances for the manufacture of butter and cheese. They have been sent to Iowa for the reason that land can be had for a song in comparison with its cost in New York or any of the older States, while the expense of getting goods to market is relatively not so much as it is in this State. Another reason is that Iowa took all the prizes in creamery butter at the last international dairy fair in New York. That is an item which seems to count.

But the fact that these young men are sent to school, as it were, to make themselves familiar with manufacturing processes and with the breeding and rearing of cattle, shows that the business men who are their fathers fully understand the necessity of such a course, and will no more allow their sons to enter upon the dairy business without thorough preparatory training, than they would take them into partnership with themselves before they had spent the proper time in mastering the details of mercantile life. Rancid butter is no longer a merchantable article, and he who would manufacture a butter that will be profitable, or a cheese that will command the top of the market, must apprentice himself to the work and learn it with as much care as a watchmaker learns his trade or a chemist his profession.

### Seed Wheat.

Mr. Geddes says:—"If farmers would exercise as much care in selecting seed wheat as they do in corn there would be less running out." This is a fact, and I am surprised that more farmers do not see it. In my experiments with corn, I have tenaciously held the fact that the top ear bears the only seed suitable to plant, and as tenaciously do I hold that there is only one head in each stool of wheat perfect enough to keep it from deteriorating. Another reason why wheats run out is that, as long as farmers take their seed from the common granary, so long will it diminish in yield. They may sift it, sling it across the barn floor, and run it through a hundred sieves, and it will still degenerate. Not until they exercise the patience and science of hand-picking a bushel or two every year from the top heads of the best stools, and sowing them alone on some choice lot for seed the following year, will they escape the degenerating influences of bad, unremunerative crops. Wheat is so remarkably sensitive that it receives the slightest attention most kindly; and, on the other hand, the presence of any foreign plant (even another kind of wheat,) weed, fly, bug or worm, takes from it its life to such a degree that every farmer loses many bushels annually.

TRI-STATE PIC-NIC AND EXHIBITION.—The seventh annual pic-nic of the Patrons of Husbandry and other farmers of Pennsylvania, West Virginia and Maryland, will be held Aug. 24—27, at Williams' Grove, near Mechanicsburg, Pa. There will be an exhibition of farm products, machinery, &c.

## The American Farmer.

PUBLISHED ON THE FIRST OF EVERY MONTH

By SAM'L. SANDS & SON,

At 128 W. Baltimore Street, (sign of the Golden  
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WM. B. SANDS, Proprietor.

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WM. B. SANDS, } Editors and Publishers.

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Transient Advertisements payable in advance—all  
others quarterly.

Advertisements should reach us by the 27th of the  
month, to secure insertion in the succeeding issue.

BALTIMORE, AUGUST 1, 1880.

### Appointment of an Inspector.

Governor Hamilton has appointed Mr. Dan'l  
Lemay, V. S., General Inspector, to have cogni-  
zance of any cases of pleuro-pneumonia  
which may exist or arise in the State. Mr.  
Lemay is a graduate of the Montreal Veterinary  
College, and well acquainted with the disease.

### Lease of Agricultural Fair Grounds.

We understand the Maryland Jockey Club has  
renewed for ten years its lease upon the Pimlico  
Fair Grounds,—the privilege being reserved of  
holding an agricultural exhibition thereon once  
in three years, the charter of the State Agri-  
cultural and Mechanical Association lapsing  
unless this is done.

MESSERS. J. C. DURBOROW & Co. advertise the  
"Superior" Drill, for which a number of advan-  
tages are claimed. They also offer the "Superior"  
Super-phosphate, a new brand, which they con-  
trol.

### Landreth's Seeds.

We call attention to the advertisement of  
Turnip Seeds of the house of D. Landreth &  
Son, which is one of the oldest, most reliable  
and most extensive in this country. Those in  
need of Seeds cannot do better than forward  
their orders to them.

### The Baltimore County Fair.

The Premium List has just been issued for the  
Second Annual Fair of the Agricultural Society  
of Baltimore county, to be held at Timonium,  
September 7-10. It is more comprehensive than  
that of last year, and includes some new features,  
which will, it is thought, add interest to the  
exhibition.

A number of improvements have been made on  
the society's grounds in anticipation of a large and  
effective fair, including the erection of a spacious  
building for the accommodation of the domestic  
manufactures and other articles likely to be  
injured by exposure to the weather. Some  
smaller buildings have also been put up and the  
grounds otherwise fitted for their purposes.

The site of the society's exhibition, directly  
on the Northern Central Railway, with its cen-  
tral location as regards the whole State and its  
easy accessibility, would seem to second the sug-  
gestion of the managers of the society that the  
citizens of other counties should join in con-  
tributing their stock, products and wares to the  
fair. All are cordially invited to do so, competi-  
tion being open without reservation.

The managers expect this year a very hand-  
some and full display in every department.

### The Gunpowder Farmers' Club

Held its July meeting at the farm of Joseph  
Bosley, who is now the most venerable member,  
as well as most generally recognized as among  
the best farmers in the community, and one  
whose example and influence are abundantly  
recognized therein. The committee of inspec-  
tion, on their tour of examination, found every-  
thing about the buildings, fields and grounds in  
complete order, fences well kept and white-  
washed, the working and milking animals in  
good condition, the manure in the barn-yard  
banked up in an immense pile, and everything  
in the condition betokening the active eye of a  
careful master.

After the return from the tour of inspection,  
the acting secretary announced that he had  
received from Prof. Maurice a letter and copies  
of several issues of the *Mariboro' Gazette*, the  
latter containing strictures on the conduct of  
the Agricultural College, and the former request-  
ing permission to appear at the next meeting of  
the club to explain the writer's plan of convert-  
ing that institution into an experiment station.  
The secretary was instructed to reply that the  
views of the club, as heretofore publicly  
expressed, were well known, both as regards the  
desirability of an experiment station and the  
uselessness, as conducted, of the college, and

that at present it was not thought necessary to take any further action in the matter.

#### Half Hour for Questions.

B. McL. Hardesty to Sam'l M. Price—Would you reseed a wheat field where grass has failed? Yes, harrow well and seed the 1st September.

S. M. Price—Has any one tried sowing at last working of corn? A. C. Scott said Mr. Longnecker had tried it last year and got a good set.

A. C. Scott would know whether it would do any good or harm at this date (July 17) to plow corn. Jos. Bosley said it would do no good in the dry condition of the ground. D. Gorsuch is using to-day a short-toothed Woolsey harrow once in a row. Lewis Bacon asked whether early or late sowing rye was best? D. G. said September 12th to 15th was about best time.

The discussion of the question as to whether selling the crops raised or feeding them to fattening or dairy animals had paid best during the past five years, was then taken up.

N. R. Miles—Thinks feeding cattle and selling cream and milk has paid best, as it saves the time and expense of hauling.

S. M. Price—If a person is fixed for dairying, no doubt it pays best, as so large a proportion of its products goes back to the farm. Sheep have always paid him,—cattle generally; but leaving out of consideration the improvement of the land, selling the crops have paid best. Hay, at \$20 a ton, pays better than raising cattle. (q.) Do you think grazing is better for the land than mowing? (a.) Yes, unless you pasture too close.

John Crowther, Jr.—In the last five years, on an average, it would have paid best to feed on the farm, and the manure so gained would have been realized now in the increased crops. Has no experience in dairying. Sheep are profitable if attended to.

D. Gorsuch—Is satisfied that since he sold his stock he is doing better in his farming. Differs with the majority of the club as to pasturing, believing that the continued biting of the stock injures more than mowing. Is satisfied with his cropping, thanks to the aid received from commercial fertilizers.

B. McL. Hardesty—Has had no experience as between the two systems. Situated otherwise than where he is, would be inclined to feeding rather than selling his crops.

W. W. Matthews—Has no experience in fattening cattle or feeding sheep, but believes, with low prices of last year, the best policy was to feed, and, with present prices, best to sell.

Col. Franklin—On the farms under his control here the only product sold is wheat, all the rest being consumed by the teams, this being a necessity of the case. On a farm in Pennsylvania the same policy is adopted from choice. A neighbor there of his, who sold his cattle at no profit, considered he made on his land an annual interest of 7 per cent., the land being valued at \$116 per acre.

A. C. Scott—Has not fed cattle or sheep, but dairying has paid well. Sells his hay and feeds his dairy cows on fodder. When hay is under

\$15 and cattle fairly cheap, dairying would pay better than selling hay.

Ed. Scott—Taking the five years together, feeding cattle has been more profitable. The dairy has certainly paid.

L. Bacon—Considers it best to pasture even at present price of butter.

E. H. Matthews—Believes it pays best to feed sheep and cattle.

The club adjourned to meet at Mr. Crowther's, in August.

#### State and District Fairs—1880.

American Institute.	New York City.	Sept. 15—Nov. 27
Alabama.	Montgomery.	Nov. 8—13
Arkansas.	Little Rock.	Oct. 18—23
California.	Sacramento.	Sept. 30—25
Cincinnati Industrial.	Cincinnati, O.	Sept. 8—Oct. 9
Connecticut.	Meriden.	Sept. 21—24
Delaware.	Dover.	Sept. 27—Oct. 2
Fat-Stock Show.	Chicago.	Nov. 15—20
Georgia.	Atlanta.	Oct. 18—23
Illinois.	Springfield.	Sept. 27—Oct. 2
Indiana.	Indianapolis.	Sept. 27—Oct. 2
Iowa.	Des Moines.	Sept. 6—10
Kansas.	Topeka.	Sept. 13—18
Kentucky.	Louisville.	Aug. 30—Sept. 4
Maine.	Lewiston.	Sept. 21—24
Maryland Horticultural.	Baltimore.	Sept. 28—Oct. 1
Michigan.	Detroit.	Sept. 13—17
Minnesota.	Minneapolis.	Sept. 6—11
Montana.	Helena.	Sept. 6—11
National Fair.	Washington, D. C.	Oct. 4—9
Nebraska.	Omaha.	Sept. 20—26
New England.	Worcester, Mass.	Sept. 7—10
New Jersey.	Waverly.	Sept. 30—26
New York.	Albany.	Sept. 13—17
N. E. Ind. & N. W. Ohio.	Hicksville.	Sept. 21—24
N. E. Kentucky.	Florence.	Aug. 30—Sept. 4
Northern Indiana.	Ft. Wayne.	Sept. 6—10
Northern Ohio.	Cleveland.	Sept. 6—11
Ohio.	Columbus.	Aug. 30—Sept. 3
Ohio Tri-State Fair.	Toledo.	Sept. 13—18
Peninsula.	Middletown, Del.	Sept. 21—24
Pennsylvania.	Philadelphia.	Sept. 6—18
South Carolina.	Columbia.	Nov. 6—12
Southern Ohio.	Dayton.	Aug. 30—Sept. 3
St. Louis.	St. Louis.	Oct. 4—9
Texas.	Austin.	Oct. 19—23
Vermont.	Montpelier.	Sept. 14—17
Virginia.	Richmond.	Oct. 26—29
Western New York.	Rochester.	Sept. 29—Oct. 1
Wisconsin.	Madison.	Sept. 6—10

#### Maryland County Fairs.

Baltimore.	Timonium.	Sept. 7—10
Montgomery.	Rockville.	Sept. 8—10
Carroll.	Westminster.	Sept. 29—Oct. 1
Harford.	Belair.	Oct. 5—8
Frederick.	Frederick.	Oct. 12—15
Washington.	Hagerstown.	Oct. 19—22

#### Seed Corn.

Professor A. E. Blount, of the Colorado Agricultural College, gives this advice about seed-corn: "Always select even-rowed ears and ears whose rows are straight, not irregular on the cob. Ears that taper are best because better protected by the husk; and then, too, the silk—the female part of the plant—remains alive longer. My reason for selecting the top ear for seed is that it is always more fully developed, more uniform and more vigorous in its germination, having been better fertilized when in the silk."

**PROTECTING YOUNG APPLE TREES FROM BORERS.**—With small trees that are just set, or are but a few years old, the following method of protection was adopted by a friend of ours, which he found quite successful in keeping them away: Having some strips of wire screening, such as are used for windows, he put them around his trees, bringing the ends together and fastening them as stovepipe is fastened, leaving a space between the tree and screening of about an inch, which was filled with waste cotton. This will last four or five years, and proves an effectual remedy.—*Gardeners' Monthly.*

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### Baltimore Markets—July 31.

**Breadstuffs.**—*Flour.*—The market for all grades has ruled very steady and firm the past week. Business, however, was very light. We quote: Howard Street Super \$3.75; do. Extra \$4.00; do. Family \$5.37; do. City Mills Super \$3.50; do. low and medium Extra \$4.00; do. Rio Grande Extra \$5.87; do. Spring Wheat Flour, patented, \$5.25; do. Patagon Family \$6.85; do. Extra \$4.65; Fine Flour \$2.50; do. Rye Flour \$4.75; do. Corn Meal, City Mills, 7 bbl., \$2.50; do. do. 100 lbs., \$1.30.

**Wheat.**—The market was active. We quote: Southern Fultz \$1.75; do. longberry \$1.00; do. 21.14; Western No. 2 red spot \$1.09; do. 1.09; do. do. 1.09; do. do. August \$1.08; do. do. September \$1.08; do. do. October \$1.08; do. do. 1.09.

**Corn.**—Southern white 53; do. yellow 13; Western mixed spot 46; do. do. July 46; do. do. August 47; do. do. September 48; do. do. 48.

**Rye.**—Good to prime 70; do. 72.

**Oats.**—Western mixed 42; do. bright and white 43; do. Southern, new, 41; do. 44.

**Hay and Straw.**—For new Hay the market is dull and heavy, but old do. is steady and in fair request. Straw is dull, but steady as to prices. We quote: Cecil County Timothy, new, \$1.00; do. Mid. and Pa. co. do. \$1.10; do. Western hay, old, \$1.18; do. mixed hay, new, \$1.17; do. Clover \$1.45; Wheat Straw \$0.10; Oat do. \$1.11; do. Rye do. \$1.10.

**Milk Feed.**—We quote City at \$15; do. 15.50 for middling, and \$16; do. 17 for brownstuff, and Western bran at \$14 1/2 ton, with the market steady for each.

**Provisions.**—There has been a general in the market for the hog product. We quote: Bulk Shoulders 5 1/2; Bulk clear rib Sides 8 1/2; Bulk long-clear Sides 8; Bacon Shoulders 6 1/2; do. clear rib Sides, new, 8 1/2; Sugar-cured Hams 11 1/2; do. do. Shoulders 7 1/2; do. do. Breasts 9 1/2; Mess Pork, 7 bbl., heavy, \$14.75; Rump Pork, heavy, new, \$11.50; Lard, City, tins, 8c; do. refined, tins, 8 1/2c.

**Poultry.**—Live Chickens are in large supply, particularly young stock, and prices have declined. Quote for old 8 1/2 cts.; young do. 11; do. 12 1/2 1/2 lb., and domestic Ducks \$2.50; do. 3 1/2 doz.

**Butter.**—Is in very light receipt, and demand active, particularly for the better grades, with prices firm and high. We quote: Choice Creamery 24; N. Y. and Bradford Co., fresh tubs, 22; do. do. prime to choice, 21; do. 22; N. W. dairy tubs choice 18; do. W. reserve choice 18; do. do. good to prime 15; do. 17; common to fair 12; do. 14; Southern Ohio, packed, 15; do. 17; nearby receipts 15; do. 17 cts.

**Cheese.**—The market has still further advanced, with good fair trade demand: N. Y. State choice 11; do. do. good to prime 10; do. 10 1/2; Western choice 9; do. do. good to prime 8 1/2; do. fair to good 6; do. 7 cts.

**Eggs.** Market about steady, with sales at 12; do. 13 cts. for both nearby and Western.

**Wool.**—We quote: Good unwashed 32; do. 34; Tub washed 40; do. 45; Pulled 36; do. 38; Merino 25; do. 28; Burry 23; do. 26 cents.

**Rice.**—Our market keeps quiet; business continues only in a retail way, with quotations nominally unchanged. Quote 6 1/2; do. 7 1/2 cts. 1/2 lb., as to quality.

**Cotton.**—The market for the past week has been quiet. We quote: Good Middling 11 1/2; Middling 11 1/2; Strict Low Middling 11; Low Middling 11 1/2; Strict Good Ordinary 10 1/2; Good Ordinary 9 1/2; Ordinary 8 1/2.

**General Produce.**—We quote: Potatoes, sweet, 7 bbl., \$3.00; do. 4.00; do. old, 7 bbl., \$1.75; do. 2.00; Potatoes, new, 7 bbl., \$1.25; do. 2.00; Onions, 7 bbl., \$3.00; do. 3.50; Whortleberries, 7 bucket, 35; do. 40 cts.; Blackberries, 7 bucket, 25; do. 35 cts.; Cabbage, 7 bbl., \$1.75; do. 2.50; Peas, 7 bu., box, 75; do. 1.25; Green Apples, 7 bbl., 50; do. 75 cts.; Peaches, 7 bu., box, 40; do. 60 cts.; Plums, 7 bu., box, 22; do. 25; Watermelons, prime, 70, \$8; do. 10; Cantaloupes, 70, \$1.00; do. 2.00.

**Dried Fruits.**—We quote: Dried Apples, fancy sliced, 8; do. do. choice, 6; do. 8 cts.; do. good, 6 1/2 cts.; do. Ohio bright quarters, 6; do. 6 1/2 cts.; do. ordinary, 5; do. 5 1/2 cts.; Cherries, pitted, new, 10; do. 12 cts.; do. unpitted, 2; do. 3 cts.; Blackberries, new, 7; do. 8; Whortleberries 9 cts.; Raspberries 22; do. 25 cts.; Peaches, peeled, fancy, 12; do. 13 cts.; do. do. good, 10; do. 11 cts.; Peaches, peeled, common, 5; do. 8 cts.; do. unpeeled, halves, 6; do. 7 cts.; do. do. quarters, 5; do. 6 cts.; Peas 7; do. 8 cts.



**Tobacco.**—Receipts of Maryland continue fair, and in good demand for France. We quote: Maryland, inferior and frosted, \$3.50@3.75; do. sound common, \$3.50@4.50; do. good do., \$5@5.50; do. middling, \$8@9; do. good fine red, \$8.50@10; do. fancy, \$11@15; do. ground leaves, new, \$2.50@3; Virginia, common and good lugs, \$3@5.50; do. common to medium leaf, \$6@8; do. fair to good leaf, \$9@10; do. selections, \$12@16; do. stems, common to fine, \$1.50@2.

**Live Stock.**—**Beef Cattle.**—The market for this week was quiet. We quote: Best beefs, \$4.75@5.40; first quality, \$3.75@4.75; medium or good fair quality, \$3@3.75; ordinary thin steers, oxen and cows, \$2.50@3.75; extreme range of prices, \$2.50@5.40. Most sales were from (per 100 lbs.) \$3.75@4.75.

**Hogs.**—We quote at 6½@6¾ cts., with most sales ranging at about 5½ cts. ♀ lb. net, and fair prospects just now for a continuance, for a few days at least, of present prices.

**Sheep and Lambs.**—We quote mutton Sheep 3¼@4½ cts. ♀ lb.; stock sheep at \$2@3 ♀ head, and Lambs at 4@5½ cts. ♀ lb. gross.

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The undersigned, a graduate and A. M. of Princeton, with several years experience in teaching, desires a situation in either a public or private school. References given if desired. Address, stating terms, etc.

**ALBERT E. ACWORTH.**

Russum, Wicomico Co., Md.

## THE MILD POWER CURES

Humphreys' Homeopathic Specifics  
Proved from ample experience an entire success, Simple, Prompt, Efficient, and Reliable, they are the only medicines adapted to popular use.

LIST PRINCIPAL NOS.	CURES.	PRICE.
1.	Fever, Congestion, Inflammations, .	25
2.	Worms, Worm Fever, Worm Colic, .	25
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13.	Croup, Cough, Difficult Breathing, .	25
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20.	General Debility, Phys'l Weakness, .	50
21.	Kidney Disease, .	50
22.	Yerous, Debility, Spermatorrhea, .	1.00
23.	Urinary Weakness, Wetting the Bed, .	50
24.	Disease of the Heart, Palpitation, .	1.00

For sale by druggists, or sent by the Case, or single Vial, free of charge, on receipt of price. Send for Dr. Humphreys' Book on Disease, &c., (114 pages), also Illustrated Catalogue, FREE.

Address, Humphreys' Homeopathic Med. Co., 109 Fulton St., New York.

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## Butter Worker.

LILLY'S  
PATENT.

Beat the "Centennial Premium Machine" and the "Less Than Five Minute Machine" at the Pennsylvania State Fair last September. First Premium over all the different makes at the Dairymen's Fair, Delhi, N. Y., last December. Send for Circulars. Sure to give satisfaction.

**C. H. R. TRIEBELS,**

316 RACE STREET, Philadelphia, Pa.

## TO KEEP IT SWEET USE CIDER or prevent SECONDARY FERMENTATION

### IMPROVED PRESERVING POWDER.

It does not impair the taste or flavor, is thoroughly reliable and absolutely harmless to the human system. Send 35 cts. for a sample, forwarded free, sufficient for 40 gallons. Per pound \$1.50, sufficient for 300 gallons, receiver paying charges. Price lower in larger quantities. **W. ZINSSER & CO.,** 197 William St., N. Y.

**PURE  
FRESH  
SEEDS  
CABBAGE  
HEALTHY  
RELIABLE  
PLANTS**  
Also CELERY. Best and cheapest in America. Millions of Plants. Catalogue free. **I. F. Tillinghast,** La Plume, Pa.

**EASTERN SHORE NURSERIES.**

DENTON, CAROLINE CO. MD.

 **FALL OF 1880.** 

My new "PRICE-LIST" for coming fall is ready, and will be mailed free to all applicants giving Post-Office address *plainly written*, (including name of county.) My prices are "SUB-SOILED," so far as a downward tendency goes; while I am happy to inform my former customers and all the readers of the *American Farmer* that the growth of my stock was never better than the present season. Peach and Apple trees are particularly fine, while the list of valuable varieties has been greatly increased. A complete assortment of all kinds of Fruit, Shade and Ornamental Trees; an immense stock of Grape Vines, Asparagus Plants, Flowering Shrubs, &c., &c. Correspondence solicited.

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No. 10 SOUTH STREET, BALTIMORE.

Branch—1326 Cary Street, Richmond.

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**PURE BONE DUST,**

**Dissolved Pure Raw Bone,  
Glue, Neats Foot Oil, &c.**

**71 SMITH'S WHARF, (foot of Gay Street.)**

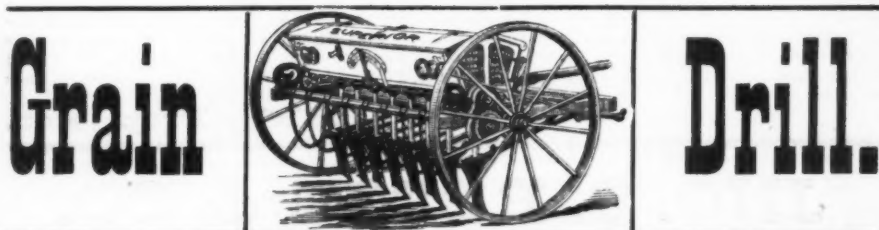
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Also Agents for F. O. Norton's Rosendale and Bridges & Henderson's Round  
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## The "Superior"



The Only Perfectly Adjustable Force-Feed Drill in the Market.  
NO CHANGE OF GEAR WHEELS.

**ABSOLUTELY NO BUNCHING OF THE GRAIN.** The change from small to large quantity made instantly, without stopping the team. The speed of the Feed Cups is always the same for large or small quantities, thus insuring regular sowing.

THE DRILL has a continuous wrought-iron cold-rolled Axle, fastened rigidly to the Frame, and it DOES NOT REVOLVE with the wheels, but each wheel revolves independently, thus giving a long steady bearing, and is FAR SUPERIOR to the revolving Axle.

THIS FERTILIZER ATTACHMENT IS UNSURPASSED, and will sow all kinds with the greatest regularity. Our GRASS SEEDER is a Force-Feed and in a moment can be changed to sow either in front or rear of Hoes.

**EVERY DRILL FULLY WARRANTED.** Send for Circulars and Price-List.

We also keep always on hand a fine line of **CIDER MILLS** and other **AGRICULTURAL IMPLEMENTS**.

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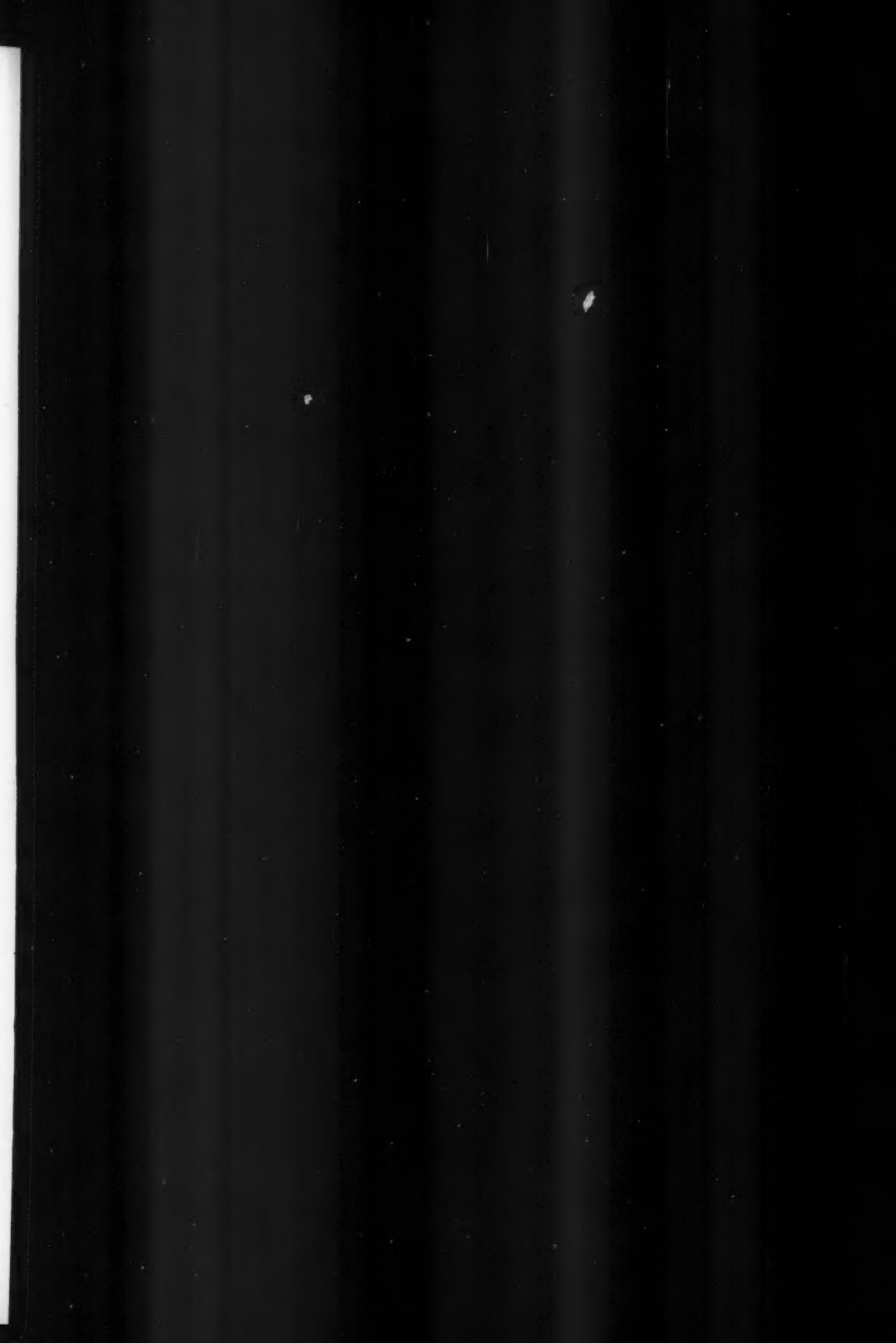
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WE ALSO MANUFACTURE THE

# Superior Super-phosphate

A High-Grade Fertilizer for Wheat and all Grain Crops. Rich in all the essentials required for the **PRODUCTION** of **WHEAT**, and sold at a moderate price. Send for Circular and prices.







# COULSON'S Pure Ground Bone,

STRICTLY PURE  
BONE MEAL.

Liberal Inducements offered Farmers and others at the Mill, Jenkins Lane, North of Greenmount Cemetery.

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**WM. CORSE & SONS,**

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**BALTIMORE.**


We offer for sale the coming season a large stock of **FRUIT and ORNAMENTAL TREES** in great variety, comprising **Apple, Peach and Pear Trees**, (standard and dwarf,) **Evergreen and Shade Trees**. All varieties of Grape Vines, Currant, Gooseberry and Blackberry Bushes, Strawberry Plants, etc.

Having added 100 acres to our Nurseries for the cultivation of **Small Fruits**, we are prepared to furnish stock to those planting largely as low as they can be bought in the country.


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### Thomas Matthews & Son,

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 **WHITE PINE and YELLOW PINE LUMBER FOR BUILDING.**

**ROUGH AND DRESSED LUMBER.**

 **HARDWOOD FOR WHEELWRIGHTS and CABINET-MAKERS. SHINGLES,**  
LATHS, PALES, etc., at **LOWEST PRICES.** au

## GEO. F. SLOAN & BRO.

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**DOORS, SASH, BRICKS, &c.**

**IN LOTS TO SUIT,**

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# MONARCH OF THE SEEDING!

THE OLD AND RELIABLE

## BICKFORD & HUFFMAN GRAIN DRILL.

The Only Double Distributor Drill in the World.

Instantly and by a Single Movement changed from a drill especially adapted to seeding the fine heavy grains to one especially adapted to sowing the coarse bulky grains.

### THE BONANZA GRASS SEEDER.


The only Seeder readily adjustable to work in front or rear of Tubes, with equal facility for work in either position, securing uniformity and certainty of distribution of all grass seeds, large, small or mixed.

### THE FERTILIZER ATTACHMENT,

The fundamental principles of which have been demonstrated by our manufacture of the past quarter of a century, with the improvements of the last year, has proved its eminent superiority over each and every competitor, readily and satisfactorily distributing Fertilizers whose composition or condition rendered their distribution impossible by any other device.

### THE COMMON-SENSE SPRING TUBE

Is thoroughly practical in its operation, simple in its construction, possessing all the endurance and wearing quality of the Pin or Peg Tube. Using no gum or rubber in its construction, it is impervious to weather or exposure, and if accidentally broken can be repaired at your homes, saving the cost of transportation and delay.

 All these Drills are furnished with Neck Yoke, Whiffletrees, Land Measurer and the Davis Patent Tube Shifter, for which an extra charge is made on all other Drills using it.

The Superior Manufacture and Finish of these Drills are too well known to require mention here.

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## Greene's Water-Proof Lime Paint.

THE ATTENTION OF HOUSEKEEPERS, FARMERS, GROCERS and OTHERS,

Is called to the above Useful and Valuable Preparation for all  
**WHITEWASHING AND SANITARY PURPOSES.**

It costs less than common Whitewash, and its durability and beauty are two-fold greater. It never loses its strength, but improves by age. By allowing a little water to remain over it, it can be kept for years. When applied it forms a surface as smooth as Calomine, without glue or plaster. It can be used for priming on rough surfaces, such as wooden roofing, fencing, telegraph poles, &c., at a comparatively nominal cost, and for coating on outside walls to keep out dampness. One gallon of this preparation, with the addition of water, will produce about four for ready use. It can be used conveniently and economically in making Mortar, finishing insides, and for all purposes in which lime is generally employed. It can be used as ballast in ships, and sold in many places at a large profit. Those who buy in barrels will find it convenient to supply their customers with any quantity desired. It is a good thing to have about the house, as it is always ready to Whitewash and purify closets and other places.

### 14 South Delaware Avenue,

being convenient to the Great Market, where the principal grocers pass with their wagons, they will find it easy to call at our factory and take on buckets or barrels at their convenience. We have recently made a great improvement in this preparation, which renders it altogether superior to that at first put upon the market for outside waterproof coating, and priming for rough surfaces. We solicit a trial. Apply to your Grocer for it. Discount to Wholesale Dealers.

J. H. GREENE & CO., Manufacturers,

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## J. H. GREENE'S LIME PAINT IN COLORS

CASH PRICES DELIVERED AT THE FACTORY, 14 SOUTH DELAWARE AVENUE.

Cream Color, per brl. \$2.50	Peach Bloom, per brl. \$3.50	Buckets, per dozen \$7.50	WHITE.
Blue " " \$3.50	Brick Color, " " \$3.50	" single \$1.00	
Brown, " " \$3.00	Lavender, " " \$3.50	" white 60	Per barrel ..... \$2.00
Drab, " " \$3.50			Buckets, per dozen ..... \$6.00

To save freight charges as much as possible to our customers, whenever practicable, we send by the cheap transportation lines. All orders promptly attended to. J. H. GREENE & CO., 14 South Delaware Avenue, Philadelphia, Pa. Also Depot for GREENE'S FIRE AND WATER-PROOF PAINT (warranted.) Has stood the test of Iron Cars used over a white heat.

## CRIFFITH & TURNER,

MANUFACTURERS OF AND DEALERS IN

## Agricultural Implements and Machinery,

Garden and Field Seeds, Fertilizers, &c.

41 and 43 N. Paca Street, BALTIMORE.

McCormick's Self-Binding Harvesters, Self-Raking Reapers,

And New Iron Mowers, Bullard's Hay Tedder,

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Walking and Riding Wheel Cultivators,

The Oliver Chilled Plow, Thomas' Smoothing Harrow, Harrows, Cultivators,

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**Patent Steel-Barb Fencing**—A steel thorn hedge. No other Fencing so cheap or put up so easily or quickly. Never rusts, stains, decays, shrinks, nor warps. Unaffected by fire, wind or flood. A complete barrier to the most unruly stock. Impassable by man or beast. The Farmer's Comfort; The Gardener's Security; The Gentleman's Safeguard.

**FERTILIZERS OF STANDARD BRANDS**—Griffith & Turner's Animal Bone Phosphate, a high-grade Phosphate prepared from animal bone, has given great satisfaction, and is popular wherever known. Alkaline Plant-Food is especially adapted to Corn, Oats, Potatoes and Vegetables, requiring fertilizers rich in Potash. Griffith & Turner's Unsteamed Raw Bone, Slingluff's and Baker's Dissolved Bone, Turner's Excelsior and Phosphate, Holloway's Excelsior and Phosphate, Lieter's Phosphate, Whiteock's Vegetator, Peruvian and Orchilla Guano, Plaster, Acid and Chemicals for Compounding Fertilizers.

**Reaper Sections and Knives and Repairing of All Kinds at Shortest Notice.**

Send for Descriptive Circulars.

GRIFFITH & TURNER,

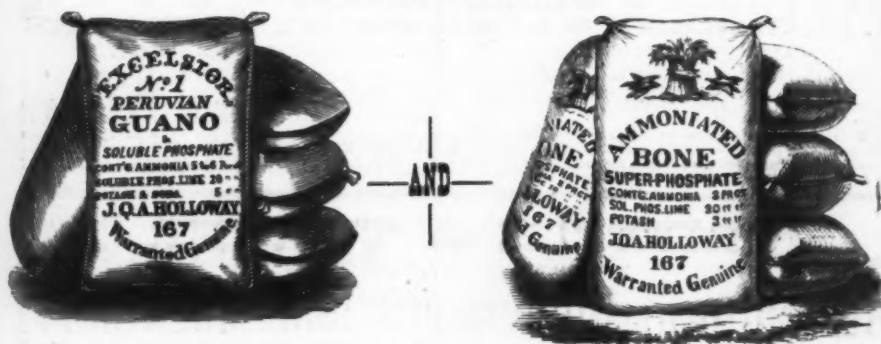
41 and 43 N. PACA ST., BALTIMORE.

# OF WHEAT GROWERS.

The undersigned, PIONEER in the manufacture of Fertilizers in this city, and ORIGINATOR in 1858 of the Formulas and processes of manufacture of

## "Excelsior" and Ammoniated Phosphate,

So well and favorably known by the Agricultural public, relying upon his experience and personal reputation hitherto acquired in the uniform excellence of these Fertilizers, as manufactured by him, continues to offer them to the Farmers and Planters of Maryland and Virginia, with the assurance that the high standard quality of each will be maintained as heretofore.



The above are the most concentrated FERTILIZERS ever offered to the farmers and planters—combining all the stimulating qualities of Peruvian Guano, and the ever-durable fertilizing properties of Bones, in fine, dry powder, prepared expressly for drilling,—it is the universal opinion of the farmers of Maryland and Virginia, after over twenty years experience in the use of the EXCELSIOR manufactured by me, in growing Wheat, that an application of 100 pounds is equal in its effects to 200 pounds of any other Fertilizer or Guano, therefore fully 50 per cent. cheaper.

With my present advantages and superior facilities for manufacturing, I challenge competition with any Fertilizer sold in the United States, in Quality, Mechanical Condition and Price.

By strictly adhering to my Original Formulas, using only the most concentrated materials, and superintending in person their manufacture—as for the past twenty years—

### Uniform Quality is Guaranteed.

Farmers, to secure the ONLY GENUINE EXCELSIOR and PHOSPHATE, prepared according to my Original Formulas established in 1858, should see that every Bag is branded as above, with the ANALYSIS and MY NAME IN RED LETTERS.

**J. Q. A. HOLLOWAY,**

Originator and Manufacturer,

107 McElderry's Wharf, Baltimore, Md.

**American Butter Wrapper.**

(Trade-mark "G. &amp; B.")

**BUTTER RAGS NO LONGER NEEDED.**

Having fully tested the merit of our Water-proof Paper & a Butter-wrapper, we offer it with confidence to all who make or handle butter as being in all respects superior to linen or cotton cloths, for the following reasons:

**FIRST**—It is always sure to be **sweet and clean.**

**SECOND**—Being air-tight, it preserves the **freshness and flavor** of the butter.

**THIRD**—It is **cheap**, being but one-sixth the cost of cloth; in fact, the cost of washing butter-cloths **ALONE** amounts to more than the price of the paper.

One of the most popular butter-makers of Chester Co., Pa., says: "It is all you claim for it, and more." And we have the voluntary testimony of hundreds of others to the same effect. Samples, with prices, will be sent by mail on receipt of a three-cent postage stamp.

Originated and manufactured only by

**GARRETT & BUCHANAN,**

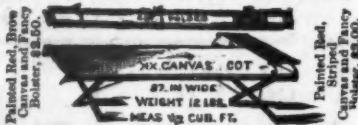
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**SOUTHDOWN BUCKS**

Twenty-five Southdown Buck Lambs for sale. They are all from imported stock of superior quality, and will be sold for \$10 each, not to leave the State.

**FRANCIS MORRIS,**

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**XX COT, Not Painted, White Duck, \$2.**

Makes a perfect bed. No mattress or pillows required. Better than a hammock, as it fits the body as pleasantly, and lies *straight*. Folded or opened instantly. Self-fastening. It is just the thing for hotels, offices, cottages, camp-meetings, sportsmen, etc. Good for the lawn, piazza, or "coziest place in the house." Splendid for invalids or children. Sent on receipt of price, or C. O. D. For 50 cts. extra, with order, I will prepay expressage to any railroad station east of Mississippi River and north of Mason and Dixon's Line. For 75 cents, in Minnesota, Missouri and Iowa.

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**HOLSTEINS.**

**THOROUGH-B ED ANGLER CATTLE**  
**FOR SALE.**

**BORSTEL, A. WITTEKIND.**  
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Near Hamburg, Germany.

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The SIXTH REGULAR WINTER COURSE OF LECTURES will commence October, 1890.  
For particulars and Circulars, address

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ESTABLISHED 1848.

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CONCENTRATED

## SUPER-PHOSPHATE

FOR ALL CROPS.

It is made of the best and most concentrated materials, possesses all the virtues of PERUVIAN GUANO and BONE-DUST combined, and is well adapted to Wheat, Corn, Oats, &c., producing abundant crops where all others fail. Having a large percentage of Soluble and Precipitated Phosphoric Acid and Ammonia, it is without doubt the richest Commercial Fertilizer in the country.

# HORNER'S

## BONE-DUST

Made only of Slaughter-house Bones, contains a larger percentage of AMMONIA and BONE PHOSPHATE LIME than any other brand in the market.

WE OFFER

**One Thousand Dollars!**

For the Detection of any Impurity in our Manufacture of Bone.

We do not steam or bake our Bones, or otherwise treat them so as to destroy the animal matter, which is rich in ammonia.

**The Best Article in the Market**

# HORNER'S

## Super-Phosphate of Lime

—OR—

**DISSOLVED BONE,**

MADE OF PURE SLAUGHTER-HOUSE BONES

It is richer in Soluble Phosphoric Acid and Ammonia than any similar article in the market.

**CHEMICALS**

And other materials for making

**Home Fertilizers**

Muriate Potash, Kainit,  
Sulphate Soda, Plaster,  
Peruvian Guano, Oil Vitriol,  
Nitrate Soda, Dried Blood,  
Dissolved South Carolina,  
Dissolved Raw Bone, &c., &c.

A full supply of PURE Materials always on hand and for sale at lowest mark

**Write or call before buying elsewhere.**

**Joshua Horner, Jr., & Co.**

OR. BOWLY'S WHARF AND WOOD STREET,  
BALTIMORE, MD.

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Manufacturer of

**Silver Ware & Rich Jewelry,**

English, Swiss and American **WATCHES** of the Best Makers;  
 Importer and Dealer in **Diamonds, Fine Watches,**  
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Premiums for Agricultural Fairs, Fine Bronzes, Opera Glasses and Shell Jewelry, &c.

All of which is offered at **GREATLY REDUCED PRICES.**

No. 135 W. Baltimore Street, near Calvert, Baltimore.

**1880. PURE-BRED POULTRY. 1880.****FOCUS MONTVUE POULTRY YARDS, FOCUS**

BROOKLANDVILLE, MD. G. O. BROWN, Proprietor.

I will spare a limited number of Eggs from my choice breeds, consisting of  
 LIGHT BRAHMAS, HOUDANS, PLYMOUTH ROCKS, LEGHORNS, BLACK  
 RED GAMES, P. COCHINS, SULTANS, HAMBURGS, DOMINQUES,  
 NARRAGANSETT TURKEYS AND BANTAMS.

My fowls have always won wherever exhibited. I send Eggs from same fowls I  
 breed my best show-birds from. Send stamp for circulars. A few Leghorns for sale.

J. J. TURNER.

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**J. J. TURNER & CO.'S**

**"Excelsior," "Ammoniated Bone Super-Phosphate," "Pure Dissolved Bones."**

(ESTABLISHED 1828.)

— **TO WHEAT GROWERS.** —

1858.



1880.

Forming the most concentrated, universal and durable **FERTILIZER** ever offered to the farmer,—combining all the stimulating qualities of Peruvian Guano and the ever-durable fertilizing properties of Bones in fine, dry powder, prepared expressly for drilling, and can be applied in any quantity, however small, per acre. It is the opinion of many close-calculating farmers, after **TWENTY-TWO YEARS** experience in testing it side by side with other popular fertilizers, that an application of 100 pounds of "EXCELSIOR" is equal to 200 pounds of any other fertilizer or guano, and therefore fully 100 per cent. cheaper.

**Uniformity of Quality Guaranteed by the Manufacturers.**

Farmers can only be secure from inferior imitations by seeing that every bag is **BRANDED** WITH OUR **NAME AND THE ANALYSIS IN RED LETTERS.**

**J. J. TURNER & CO., 42 W. Pratt St., Baltimore, Md.**

# PERUVIAN GUANO.

We have now on hand a large stock of No. 1 PERUVIAN GUANO "LOBOS," with the following analysis guaranteed:

Ammonia,	:	:	:	:	6	Per Cent.
Bone Phosphate of Lime,	:	:	:	:	40	" "
Potash,	:	:	:	:	4	" "

The GUANO is perfectly dry and free from lumps. Purchasers will please see that the bags have Hobson, Hurtado & Co.'s name stamped on them, they being the agents of the Peruvian Government.

**VOSS BROTHERS,**

50 S. Gay Street, BALTIMORE, MD.

TO WHEAT GROWERS.

## J. J. TURNER & CO.'S Ammoniated Bone Super-Phosphate



Composed of the most concentrated materials, it is

### **RICHER IN AMMONIA AND SOLUBLE PHOSPHATES**

Than any other fertilizer sold, except OUR EXCELSIOR, and is made with the same care and supervision; uniform quality guaranteed. Fine and dry, in excellent order for drilling. We have also a very superior quality of

### **PURE DISSOLVED BONES,**

And keep constantly on hand a large supply of high-grade PERUVIAN GUANO.

J. J. TURNER & CO., 42 Pratt St., Baltimore, Md.

## REV. I. R. GATES' — OLD RELIABLE — MACAMOOSE,

### THE GREAT INDIAN REMEDY

For All Diseases Arising From Impurities of the Blood.

WM. CRAWSHAW, General Agent,

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**The Farquhar Separator**

(Warranted)

Penns.

Agricultural

Works.

York, Pa.

Lightest draft

most durable

simplest, most

economical

and perfect in

use. Write us

today, please. It

ready for market.



Send for Illustrated Catalogue.

Address: A. B. Farquhar, York, Pa.

Steam Engines, Horse  
Power and Thrashers of  
all kinds. Also, Ploughs,  
Cultivators, &c., &c.**COTSWOLD SHEEP FOR SALE**

40 to 50 Ram and Ewe Lambs that promise to shear from 12 to 30 lbs. to the fleece: fit for delivery September 1st. Sired by imported "Golden Locks," of nearly 400 lbs. carcass and 21 1/4 lbs. fleece, and "Duke of Gloucester," of 350 lbs. carcass and 24 lbs. fleece. Also, a few choice Yearling Rams.

**ED. C. LEGG,**

Kent Island, Md.

**WHITELOCK'S "VEGETATOR!"**

This article has for its base

**Bones Finely Ground and Thoroughly Dissolved**

And is so rich in

**FERTILIZING PROPERTIES**

As to carry the wheat through the severest winter. While other manures may produce a good crop of straw, there is nothing on the market that will uniformly bring the same quantity of wheat per acre. Apply three-fourths only as much as of other brands. Also for sale.

**Peruvian Guano, High-Grade Pure Dissolved Bones, Acid Phosphate, Very Rich.**

**W. WHITELOCK & CO.**

44 South Street BALTIMORE, MD.

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## Prepared Agricultural

Prepared Expressly for Each and Every Crop.

### ONLY \$15 PER TON—16 BAGS.

It is a permanent improver of the soil. The second and third year's application does not require any more than the first to produce the same results, and no more required per acre than of the other manure, but larger results as per tests. Send for testimonials and see what others have done with it.

## L. J. WARREN,

Agent for the Manufacturer, 18 E. Falls Avenue, BALTIMORE.

Also Lime, Hair, Brick, Cement and Plasters.

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## J. M. LAROQUE'S ANTI-BILIOUS BITTERS

**CURES**

**Dyspepsia, Nervousness,  
Bilious Attacks, Sick and  
Nervous Headache, Con-  
stipation of the Bowels,  
Kidney and Bladder  
Affections, Sour Stomach,  
Chills and Fevers,  
Female Diseases,  
All Bilious Affections,  
and is an  
Excellent Stomachic.**

Is a purely vegetable faultless Family Medicine, for all diseases caused by a Deranged State of the Liver. It has been manufactured at Laroque's Pharmacy, Cor. Baltimore and Harrison Sts., for more than fifty years. Its efficacy in all forms of Liver diseases has been tested and approved by thousands who have used it successfully. The price also is within the reach of all, being 25 cts for packages, and \$1 for the liquid in bottles.

**REGULATES**

Torpid Liver, and cures all Diseases arising from a disordered stomach. Its use can be stopped at any time, without any bad effects. Always beneficial; never harmful. Be sure and get the genuine. Prepared at

**Laroque's Pharmacy,**  
Cor. Baltimore and Harrison Sts.,  
and having the signature of W. E. Thornton on the label.

**W. E. THORNTON,**

PROPRIETOR,

**N. E. Cor. Baltimore and Harrison Sts., BALTIMORE, MD.**

Sold by Druggists and Storekeepers Everywhere.

# Berkshires!

I am prepared to furnish PIGS of the best blood at the following prices, boxed and delivered to express:

**SINGLE FIG. \$6.**

**PAIR, \$10.**

**TRIO, \$13.**

**THOS. J. LEA,**

Brighton P. O., Montgomery County, Md.

## BERKSHIRE PIGS FOR SALE.

On account of want of room to properly accommodate them during the winter, I offer a few animals of all ages at greatly reduced prices, if promptly applied for.

A record of thirty premiums (the true test of merit) won this season, in many hotly-contested rings, in some of which were the first prize and sweepstakes winners at the Canadian, Illinois and St. Louis shows, is sufficient (without further remark) to prove the high quality of my stock. Correspondence solicited before purchasing elsewhere. Representations and safe delivery guaranteed. I have also **Bronze Turkeys** for sale.

**ALEX. M. FULFORD,**

**BEL AIR, MD.**



**This Powder** has proven to be a most reliable preparation in all the ordinary diseases of **HORSES, CATTLE, SHEEP, SWINE and POULTRY.**

It will keep the animal in a complete, thrifty, healthy condition, naturally producing to its full capacity without any injury to its system.

Your Cow is sure to yield an increase of milk and butter of at least 25 per cent. Your stock will fatten on one-fourth less feed.

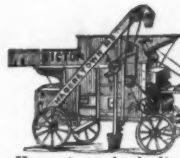
Especially does this Powder show its good effect on **HOGS**. It has also been found a sure cure and preventative of **CHICKEN CHOLERA** and **HOG CHOLERA**. Price 25 cents per pack of 12 ounces. 5 packs \$1.00. 1 dozen \$2.10. A pamphlet with full particulars. Address,

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N. B. My sales for the past six years have averaged 765 gross per year.

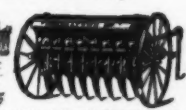


## THE VICTOR Double Muller Clover Machine

Is the only kind that has ever hulled 100 bushels of seed in one day from damp and wet straw. Send for Descriptive Circular and Price List, which contains many letters confirming this.

Hagerstown Agricultural Implement Mfg. Co.  
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## The only Southern Rake and Drill Factory in the Country.



These cuts represent our 20 Steel-Tooth Horse Rake, with Iron Hubs (or Locust Hubs boiled in oil)—9,000 in use—and our Positive Force-Feed Grain, Seed, and Fertilizing Drill (which can be changed to sow any quantity while Drill is in motion), with Pin or Spring Hoes—8,277 in use and giving satisfaction. All manufacturers say theirs are the best. All we ask is, send for Descriptive Circular and Price-List, which contains letters from persons using them. All are warranted. **HAGERSTOWN AGRICULTURAL IMPLEMENT MFG. CO.** Hagerstown, Maryland.

## Farm in Baltimore Co. For Sale, Or Exchange for City Property.

Containing 150 acres; about 25 to 30 acres in thriving timber, principally oak and chestnut; it is well watered and admirably adapted to a dairy or market farm; the soil is very kind and susceptible of the highest improvement; it is now principally set in grass. It is at the 10 mile stone on the York turnpike, fronting on both sides of the road, and five stations on the Northern Central R. R. can be reached at distances of 1 to 3 miles, by good county roads. This is the circle of the members of the Gunpowder Club, and is undoubtedly one of the best locations in the county. Churches, of all denominations, and schools, public and private, are convenient. The York turnpike is one of the very best, and the distance from the city permits a round-trip a day, for wagoning. Probably no healthier spot in the world can be found. It is laid off in fields of 12 to 15 acres, to most of which easy access is had to water for stock. The dwelling, which is commodious, and large barn, are of stone, with other out-houses, though old, yet can be made very comfortable at a reasonable expense; and there are several admirable sites for residences on the premises. This property could be advantageously divided into small lots and sold at a very great advance on the price asked for the whole. Lots on the road have brought as high as \$5.00 an acre, and the extent of the frontage on the turnpike, in the hands of an enterprising man, could be turned to excellent account, but the present owner is indisposed to take the trouble requisite to accomplish this, and would prefer selling the whole together. A gentleman with a very small income independent of the farm, could live on this place without labor, saving the rent of a city residence, by renting the fields on shares to be farmed under his control, reserving a garden and stabling, and the pasturage necessary for his stock. A small tenant's house on the premises would rent for the amount of taxes on the place. As I cannot occupy the place myself, I am willing to sell it on the most reasonable terms, or exchange it for city property in a good locality. For further particulars apply to the subscriber, at office of *American Farmer*.

**SAM'L. SANDS.**

## ORGAN BEATTY PIANO

NEW UPRIGHT 12 Stops, 2 set Golden Tongue Reeds, 12 Oct's, 2 Knee Swells, Walnut Case, warranted 4 years, Stool & Book \$300. New Pianos, Stool, Cover & Book, \$145 to \$225. Before you buy be sure to write me, illustrated Newspaper sent Free. Address **DANL. F. BEATTY**, Washington, New Jersey.

## WHY DOES

a woman's health so often break down at an early age?

Put a man at the wash-tub, let him get heated from the hot suds until every pore is opened, then let him stand over the filthy steam that comes from scalding and boiling clothes, that are full of sweat and exhalations from the skin, and his health certainly would break down before long; and yet this terrible ordeal is exactly what

## A WOMAN

has to go through on wash-day; and besides, with her clothing wet from perspiration at the hot work, she has to risk her life by going out in the air to hang up the clothes.

Even those not at the work are in the unhealthy atmosphere; its smell, so apparent to visitors, showing that it finds its way through the house,—the family, however, often becoming so accustomed to the peculiar odor from its own wash as not to notice it.

These facts, which are known to be true by every housekeeper, readily explain why so many women suffer with Rheumatism, Weak Nerves or Neuralgia, and

## LOOK OLD

while yet young in years; and Physicians and Boards of Health cannot draw attention too strongly to the injurious effects of the usual way of washing, with its necessary steam and scalding or boiling to get the clothes pure and sweet-smelling, especially as it is often the direct cause of those dreadful diseases, Diphtheria, Typhoid Fever and Consumption. Fortunately this trouble can be avoided; scalding, boiling and steam done away with; clothes made sweet and beautifully white; from the saving in fuel, the wash done at a less cost than when home-made Soap is used, and very much

## SOONER THAN

by the old way, by using **FRANK SIDDALLS SOAP**,—a Soap so Purifying and Cleansing that the dirtiest clothing can be washed in lukewarm water, with very little rubbing, and Clothes, Bedding and utensils used by the sick disinfected and cleansed without either scalding or boiling; while the work is so light that a girl of 12 or 13 can do a large wash without being tired; and yet so mild and healing is this Soap, that for toilet and shaving it has no equal, and physicians advise its use in preference to imported Castile Soap on wounds and sores and to wash the youngest infants.

Now that there is a remedy for this "great wash-day evil" so economical in its use as to be within the reach of the poorest, there is not a woman or

## A MAN

who is not directly interested in having used in their homes **THAT WONDERFUL SOAP**, which, when properly tried, not only does away with the hard work, offensive smell and fearful steam on wash-days, but makes the white pieces whiter, colored pieces brighter and flannels softer than they can be made by washing the old way, and also leaves every article as clean, as sweet and as pure as if never worn.

### NEARBY TESTIMONIALS.

From General William Craig, of MORNING HERALD; residence, 395 Lavale Street:

After a thorough trial of **FRANK SIDDALLS SOAP** in my house it is pronounced the best we have ever used. It saves an immense amount of labor and economizes the consumption of fuel to a large extent, and hereafter we shall use no other.

From Manager of Dexter Laundry, Washington, D. C.; 301 Sixth St., corner C St., N. W.:

No laundry or family can afford to be without **FRANK SIDDALLS SOAP**. We never scald or boil, and use no other Soap, and have a reputation second to no laundry in Washington for white clothes,—the superior work we have been enabled to turn out having secured us the trade of some of the best gentlemen's furnishing stores in the city.

**Sold by Retail and Wholesale Crocers.**

To points where not yet introduced, a trial cake will be forwarded to any part of the United States, post-age prepaid, on receipt of price, (10 cts.) in money or stamps.  
Address all letters,

Office **FRANK SIDDALLS SOAP**, 718 Callowhill St., Phila., Pa.

**Just think what you will save by this easy way of Washing!**

**Get a Cake and Try it for Yourself Next Wash-day.**



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FORMED BY THE

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Baggage called for and checked at Hotels and private residences through to destination. Sleeping and Parlor Car accommodations secured.

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## Patent Selenitic Cement.

New Berne, N. C., Feb. 18, 1880.

MR. WM. WIRT CLARKE, Baltimore, Md.:

Dear Sir—I have just completed a large cistern with the **Selenitic Cement**, and it gives perfect satisfaction.

Yours truly,

L. H. CUTLER.

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Sole Agent for the great BELLE CITY FEED CUTTER, "Boss of the World," for Fodder, Hay and Straw. Cuts 4 lengths, from  $\frac{1}{2}$  to 2 inches. Will cut one ton in 30 minutes. SEND FOR CIRCULAR.

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WILL NOT EXPLODE.

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LAMPS OF EVERY DESCRIPTION,

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COWS, HEIFERS,  
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All Herd-Book Animals.

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FOR SALE A few Herd-Registered **AYRSHIRE BULL CALVES.**

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[By M. AUGUSTE GOFFART.

Translated by J. B. Brown, with a history of the Art in Maryland by Francis Morris, Esq.

Illustrated by plans of Silos, &c.; a portrait of M. Goffart, &c.

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Member of the Royal College of Veterinary Surgeons, London. Treats all diseases of **Horses, Dogs and Cattle**. Spacious Infirmary Stables and Operating Shed corner **Pennsylvania Ave. and Hoffman Street, Baltimore, Md.**

## Short-Horn Bull Calves for Sale

Three handsome roan **BULL CALVES**. All from imported Dams. Sire, Duke of Bloomfield, 16,030, Vol. 12, A. H. Book.

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### KEEP IN STOCK AND FURNISH TO ORDER:

Window Sashes, Doors, Blinds, Mouldings, Brackets, Hand Railings, Balusters, Newel Posts, Bracket Shelves, Barge Boards, Window Caps, Door Caps, Pews and Church Work, Blind Hinges, Builders' Hardware, Wood Mantels, Window Frames, Door Frames, Paints, Oil, Putty, Glass, Lumber, Bricks, Lime, Sash Weights, Sash Cord, Porch Columns, Tree Boxes.

THE BEST WORK AT LOWEST PRICES.

## M<sup>C</sup>GINNIS HARROW.

From Mr. J. D. Guthrie, of Shelby county, Ky., State Grange Purchasing Agent, and famous grower of Long-Wooled Sheep.

SHELBYVILLE, Ky., May 6th, 1878.

MESSRS. M<sup>C</sup>GINNIS, TAYLOR & HOLDERBY:

GENTLEMEN—In reply to your request for my opinion, I take pleasure in saying the M<sup>C</sup>Ginnis Harrow has given universal satisfaction.

It pulverizes deeply, and its smoothing capacity is equal to any Harrow I have ever tried.

It stands unrivaled for destroying the toughest sods with its knife-like teeth, perfectly reducing the sod with two harrowings, presenting a thorough seed-bed for any kind of grain or seed.

Its draft is much lighter than the ordinary Harrow.

It is equal to the Thomas Harrow in lightness of draft, while it possesses decided advantages over the Thomas in **DEEP PULVERIZATION, STRENGTH AND DURABILITY.**

I have said thus much from observation of its working on the field.

While the Thomas Harrow is better adapted for the shallow covering necessary for very small seeds, for general purposes I think the M<sup>C</sup>Ginnis Patent is WITHOUT A RIVAL.

Yours truly, J. D. GUTHRIE.

## GILPIN'S VEGETABLE LIVER PILLS

Are prepared, with great care, from medical plants, are *coated with sugar* that they may be taken by the smallest child and upon the most delicate stomach; are intended especially to act upon the Liver—thereby relieving all such diseases as COSTIVENESS, HEADACHE, PARALYSIS, DYSPEPSIA, COLIC, JAUNDICE, and all diseases of a Biliary origin. No better evidence can be offered in favor of these Pills than the very fact that where their ingredients are known to family physicians, they are using them in their private practice. We append the following from one of our most prominent physicians:

OAKLAND, June 26, 1869.

DR. GILPIN—After carefully examining the formula of your Sugar-Coated Pills, I feel it but justice to say, that the combination is certainly perfect, and comprises the only remedies I ever believed were the proper ones to be used in diseases of a biliary origin. I shall take pleasure in recommending them not only to my patients, but the entire medical profession.

Yours truly,

J. M. WISTAR, M. D.

From one of the leading retail druggists of West Virginia:

WESTON, W. VA., June 18, 1869.

MESSRS. CANBY, GILPIN & Co.—Gents: Please send by express twelve dozen Gilpin's Vegetable Liver Pills. I have the most flattering accounts from all who have used them, and believe the day is not far distant when they will supersede all others.

Yours,

F. M. CHALFANT.

We could fill several pages with certificates, &c., from prominent men throughout the country, but prefer to let the Pills in the future, as they have in the past, rest entirely on their own merit—knowing that wherever they are known their use will pass down from generation to generation.

**GILPIN'S VEGETABLE LIVER PILLS** are sold by all respectable Druggists and Country Storekeepers throughout the United States and Canada.

Principal Depot: **CANBY, GILPIN & CO., Baltimore.**



**LAND PLASTER!**

Ground from the **HARD** Windsor Rock, which is 20 per cent. richer in the essential element, **Sulphate of Lime**, than the soft Plaster (which is used by all mills East.) Send for circular.

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Manufacturers' Agent for American and Foreign Cements and Plaster, **61 N. Gay Street, B. Itimore.**

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All Ages, Buck, Ewes and Lambs.

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MANUFACTURERS OF

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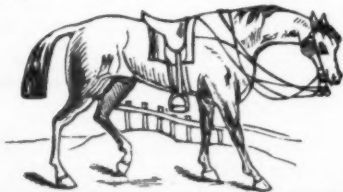
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Who offers for sale upwards of 12,000 acres of land, lying in one of the most desirable regions of Eastern Virginia.

Catalogues sent on application.

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**White Leghorns.**

As Layers, the WHITE LEGHORNS have few superiors, and are strictly **non-sitters**. Can furnish them at **\$3 per trio**, boxed and delivered to railroad.

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**IMPERIAL WINE VINEGAR.**

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Strictly pure and reliable. Many imitations, costing 3 cents a gallon, are sold as Cider Vinegar. To guard against deception observe that packages bear our brands. Fresh **APOLINARIS WATER**.

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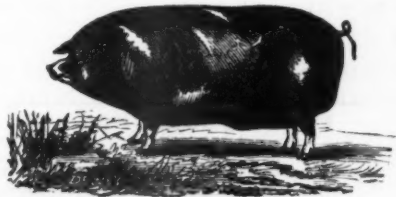


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A full line of Harvesting Machines, adapted to the wants and taste of Farmers any and everywhere.

**Buckeye Grain and Fertilizer Drill,  
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Mill Picks, Leather and Gum Belting,  
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Buckeye Force Pump,  
The Watt and Ball Plows, &c., &c.**

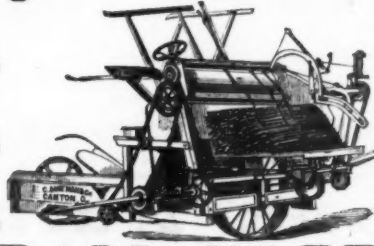
Prices and Descriptive Circulars furnished on application, and correspondence solicited from all wanting anything in my line.

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Highest Honors and Awards  
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CANTON, O.,  
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FARM ENGINE,

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RANDALL HARROWS,  
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**PERUVIAN GUANO!**



The undersigned, agent for the sale of **PERUVIAN GUANO**, imported into the United States by Messrs. W. R. Grace & Co., New York, agents for the consignees of the Peruvian Government, having just received per ships "Cashmere," "St. Lucie" and "Mystic Belle," a full supply direct from the best Guano deposits, containing 10 per cent. Ammonia, offers it for sale, delivered from the Government Storehouses, Waters' Wharf.

**J. Q. A. HOLLOWAY, 107 McElderry's Wharf, BALTIMORE, MD.**

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**FOR SALE**—Thoroughbred young **Devon Bulls** and young **Rams** of the Shropshire breed; several of the young bulls were sired by the imported **BULL MASTER JAMES**, the winner of several prizes in England; amongst others the first prize given to his class at the show of the Royal Agricultural Society of England, held at Birmingham in July, 1876. The young **Rams** were all sired by **IMPORTED Rams**, purchased at high figures, from one of the very best flocks in England, and several of them are out of **Ewes** recently imported from the same flock as the **Rams**, the others being out of **Ewes** obtained from the celebrated flock of **Mr. T. Conyer**, of Waldberg, near Haverstraw, in the State of New York. The young **Bulls** offered for sale are by **MASTER JAMES**, the sire of the Grand Prize Bull **LORD NEWSHAM**, and **MASTER JAMES** himself gained first prize of his class at the Birmingham show of the Royal Agricultural Society of England in 1876. Particulars as to pedigrees, prices, &c., may be obtained by applying to

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## Rosebank Nurseries,

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**ORNAMENTAL AND FRUIT TREES, FLOWERING SHRUBS,  
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We invite the attention of the public to our select stock of the following: **STANDARD** and **DWARF PEARS**,—2, 3 and 4 years old. **APPLES**—Standard and Dwarf. **CHERRIES**—Standard and Dwarf. **APRICOTS**, **CRAB APPLES**, **MULBERRIES**, **GRAPE VINES**, of the most popular kinds, together with other small fruits.

Our **COLLECTIONS** of **ORNAMENTAL** Trees and Shrubs are large, and embrace most of the rarest sorts.

**ROSES** on their own roots, with the newest of **BEDDING-OUT** plants by the dozen or 1,000, for which we have issued a separate Catalogue.

**SPECIAL**.—50,000 one and two-year old **OSAGE ORANGE** plants for hedges.

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All **PURE** Chemicals for mixtures, compounds of formulas for fertilizer mixtures, as low as any house for cash. Write for prices.

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## CO-OPERATIVE STOCK FARM & POULTRY YARDS, FREDERICKSBURG, VA.,

For Herd-Book Jersey or Ayrshire Cattle, bred from stock selected in person from best Northern breeders and from "Centennial" Stock Exhibition. Cotswold, Leicester, Shropshire and Southdown Sheep, all bred from best imported stock, and Lambs of each breed for sale in August. Herd-Record Berkshire Swine of best strains, and Essex surpassed by none. Poultry—Choice, well-marked young fowls from all of our varieties will be for sale this fall. Orders for eggs from all classes have closed, except Leghorns. We will continue to fill orders for Leghorn eggs, of either the brown or white variety, at \$1.50 per dozen. More premiums have been awarded to our stock at the Virginia State Fair than that of any other exhibitor in the State. And we would refer all to the whole community in which we live and where our Senior has resided for more than half a century, and particularly to all these whom we have supplied with stock, both North and South,—as we always endeavor to make our stock our best advertisement, and guarantee satisfaction.

Entered at the post-office at Baltimore at second-class rates.





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Chesapeake Chemical Works.

OFFICE, } BALTIMORE. { WORKS,  
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MANUFACTURERS AND MANIPULATORS OF

## PHOSPHATES

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We are now offering to the Trade the following **WELL-KNOWN**  
**BRANDS OF GOODS**, which we guarantee  
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### SLINGLUFF'S DISSOLVED GROUND BONE,

Containing 3 per cent. of Ammonia.

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Containing 40 to 44 per cent. Soluble Bone Phosphate.

### SLINGLUFF'S Dissolved South Carolina Phosphate

Containing 28 to 32 per cent. Soluble Bone Phosphate.

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To meet the demand for a high-grade Fertilizer, we are offering **SLINGLUFF'S NATIVE SUPER-PHOSPHATE**—prepared entirely from Animal Bone—highly ammoniated.


Also, **SLINGLUFF'S No. 1 AMMONIATED SUPER-PHOSPHATE**. This we can confidently recommend as one of the best fertilizers sold in the market at a low price.

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# **Chemical Fertilizers**

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 **Cotton, Tobacco, Corn, Oats, Wheat, &c.**  
**Works, SOUTH BALTIMORE.**

Where they have introduced the MOST COMPLETE MACHINERY for compounding Concentrated Fertilizers, that their great experience has enabled them to so successfully introduce to the Planters of the Middle and Southern States.

## **SOLUBLE SEA ISLAND GUANO**

So well-known and of UNDOUBTED EXCELLENCE.

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A High-Grade Fertilizer of KNOWN MERIT.

## **Dissolved Bone Phosphate**

Prepared from GROUND ANIMAL BONES.

## **ACIDULATED SOUTH CAROLINA and NAVASSA PHOSPHATES**

### **AMMONIATED ALKALINE PHOSPHATE,**

A complete manure, endorsed by the Patrons, who have used it with great satisfaction for the last 5 years, and is on sale by Grange Agents at Baltimore, Richmond, Norfolk, Petersburg and Alexandria.

### **RAW and STEAMED BONES, POTASH SALTS,**

And all Fertilizing Materials in Store and for Sale.

### **SPECIAL COMPOUNDS PREPARED ON ORDERS.**

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*S. W. Cor. SOUTH and WATER STREETS, BALTIMORE.*